



# Ministry of Mineral Resources



## Mozambique Fifth License Round

Hilton Hotel - London  
23<sup>rd</sup> October 2014

# Mozambique 5th License Round



This information is provided by INP as an introduction to the Mozambique 5<sup>th</sup> License Round.

Bid applications will close on Tuesday 20<sup>th</sup> of January at 12:00 noon.

For further details, information about data packages and data rooms please contact:

## **INP - Institute National Petroleum**

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### **Huw Edwards**

*Director ERCL*     [huw.edwards@ercl.com](mailto:huw.edwards@ercl.com)

### **Richard Heath**

*Director ERCL*     [richard.heath@ercl.com](mailto:richard.heath@ercl.com)



# Welcome

His Excellency

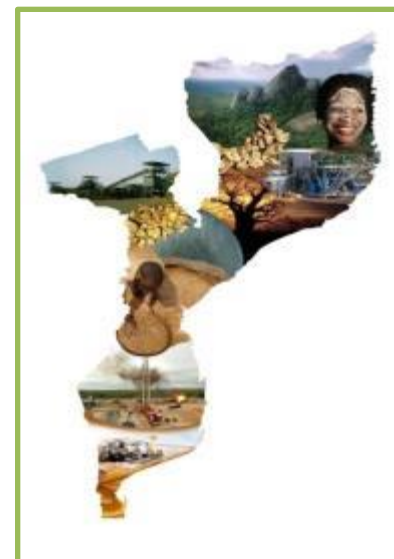
UK High Commissioner  
Republic of Mozambique

**HE Carlos dos Santos**



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# Introduction to the Panel

- |                         |                               |
|-------------------------|-------------------------------|
| 1. HE Carlos dos Santos | UK High Commissioner          |
| 2. HE Esperança Bias    | Minister of Mineral Resources |
| 3. Mr Arsenio Mabote    | INP Chairman                  |
| 4. Carlos Zacarias      | INP Exploration Manager       |

# Agenda

**10:00 – 12:00**

|                           |                             |                                              |
|---------------------------|-----------------------------|----------------------------------------------|
| <b>Welcome:</b>           | <b>HE Carlos dos Santos</b> | UK High Commissioner, Republic of Mozambique |
| <b>Opening Statement:</b> | <b>HE Esperança Bias</b>    | Minister of Mineral Resources                |
| <b>Introduction:</b>      | <b>Arsenio Mabote</b>       | Chairman of INP                              |

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## **Legal & Fiscal:**

- Overview
- Petroleum Law
- Petroleum Regulations
- EPCC

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## **Contract Areas on Offer:**

- Overview
- Technical Data
- INP - Master License Agreement
- Data Rooms

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## **Application Procedure:**

- How to make an application
- Document Summary

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## **Questions**

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**12:00 – 13:00**

**Networking – Tea / Coffee**



# Opening Statement



Her Excellency

Minister of Mineral Resources

Republic of Mozambique

**HE Esperança Laurinda Francisco Nhiuane Bias**





# Introduction



Chairman of INP

**Mr Arsenio Mabote**



# MOZAMBICAN INSTITUTIONS



## **Instituto Nacional de Petróleo**

(Institute of National Petroleum)

Chairman Arsenio Mabote

- INP is the regulatory authority for the petroleum operations (exploration, production and transport of hydrocarbons).



## **Empresa Nacional de Hidrocarbonetos de Mocambique**

(Mozambique National oil Company)

Chairman Nelson Ocuane

- Is the Mozambican State oil company established by Law 3/81.
- The Government shall ensure that ENH assume a leadership role in the marketing and commercialization of oil and gas as the sole representative of the State in the business
- Participates, as a stakeholder, in Petroleum Operations and Production and Transportation projects.
- Participates in the Exploration, with carried interest, in association with oil companies [in exploration].

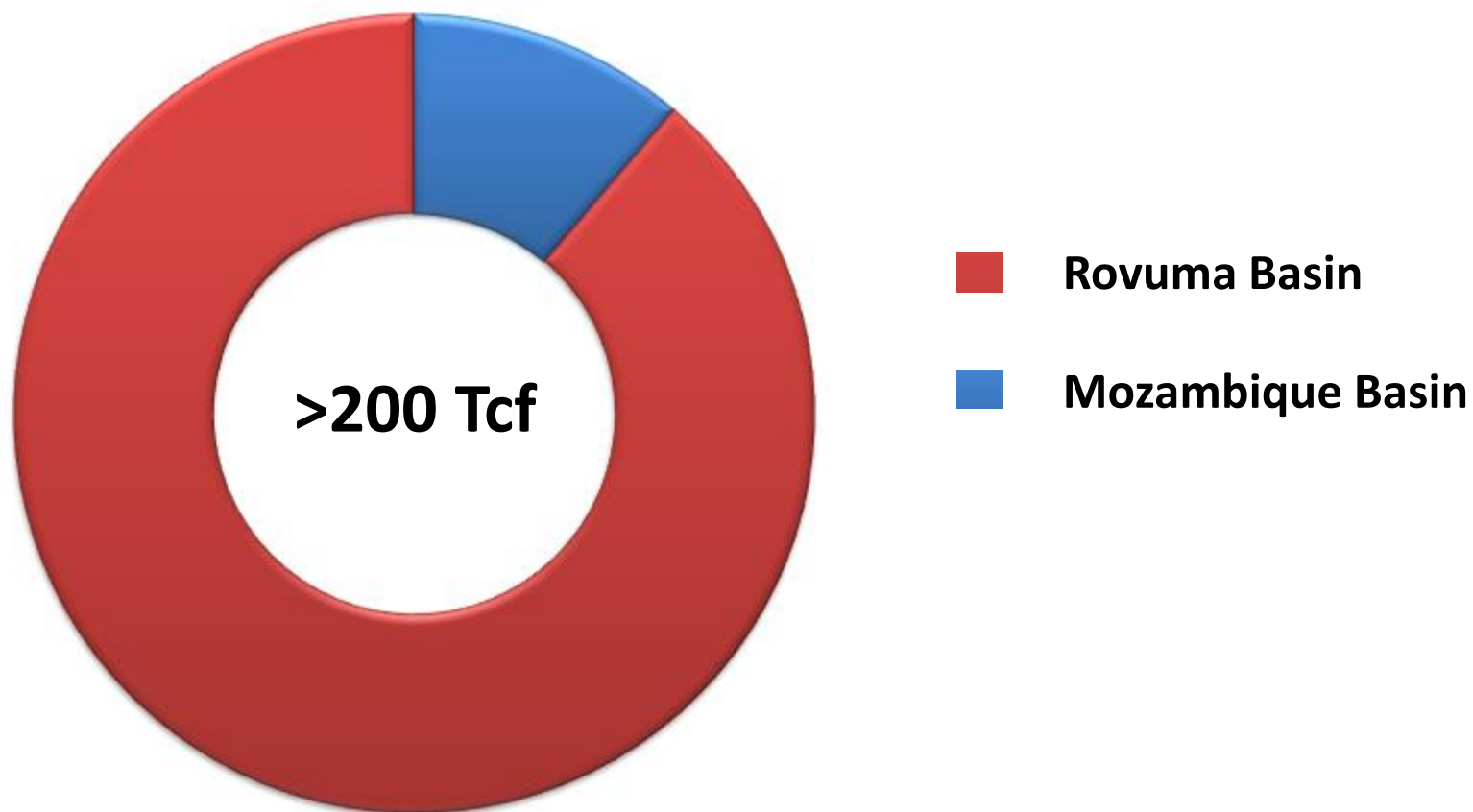
## INP MISSION

*“To manage the petroleum resources of Mozambique and administer the related operations for the benefit of the Society, and in compliance with the existing laws, government policies and contractual commitments”*

# PETROLEUM POLICY FUNDAMENTAL

- Optimal resource recovery of all petroleum resources
- Securing resource rent
- Allowing Industrial development
- Retain an efficient Petroleum regulatory and administrative regime
- Ensure production projects development and revenue collection

# MOZAMBIQUE GAS RESERVES



**Mozambique the success story continues**

# INP Licensing Strategy

## INP Exploration Strategy

- To maximise value creation from the petroleum resources in the country.

## INP Future Licensing Policy

- Licensing through open competitive bidding rounds
- Access to data / prepared data packages
- Sufficient time/resources for promotion

## INP expects companies applying for a Licenses to include;

- Regional overview
- Prospectivity analysis
- Technical work program
  - Seismic acquisition
  - Seismic reprocessing
  - G&G studies
  - Wells and TD of wells
- Duration of exploration phases
- Relinquishment Plans

# Mozambique 5<sup>th</sup> License Round Time Table

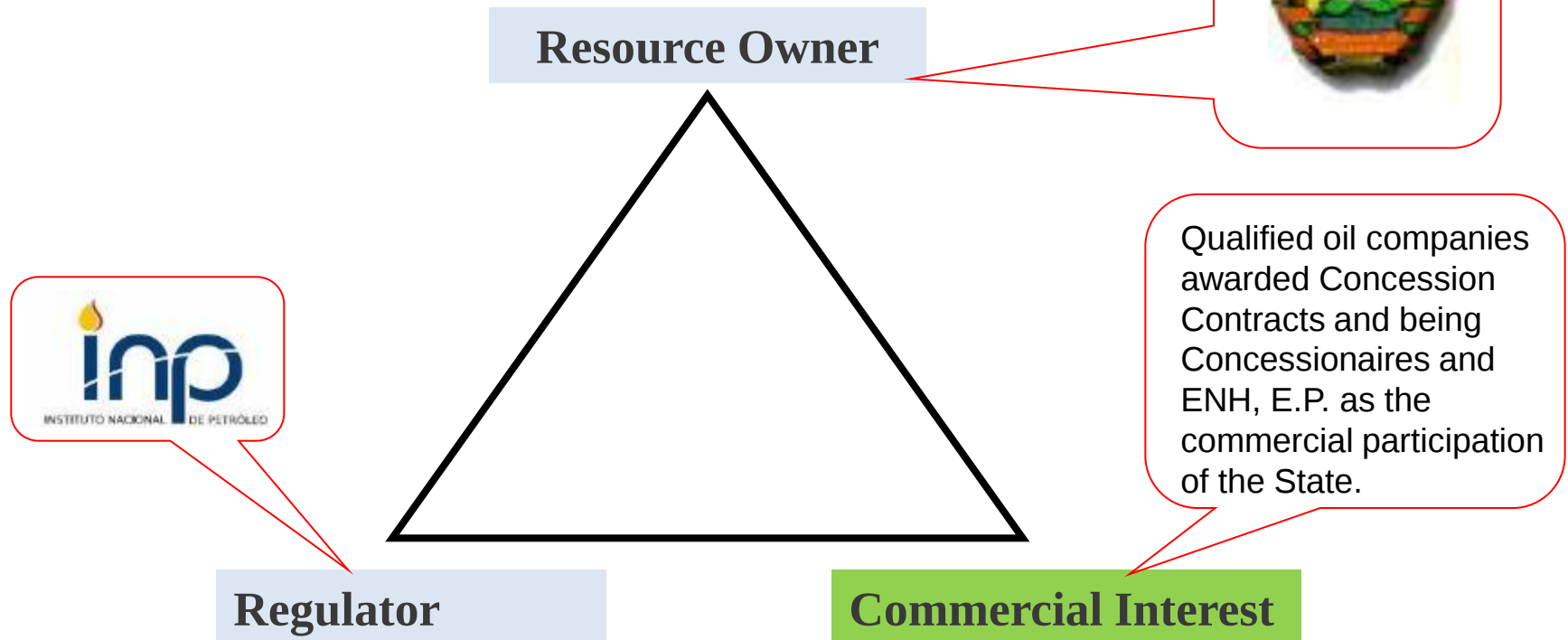
## Schedule

- Round Launched 23<sup>rd</sup> October 2014
- INP Data rooms open in Mozambique and UK (ERCL offices)
- Applications to be Submitted by 12:00 noon Tuesday 20<sup>th</sup> January 2015
- Applicant Bid Clarification Presentations expected from February 2015
- Bid Evaluation February / March 2015
- March 2015 short listed companies invited for EPCC discussions followed by EPCC awards

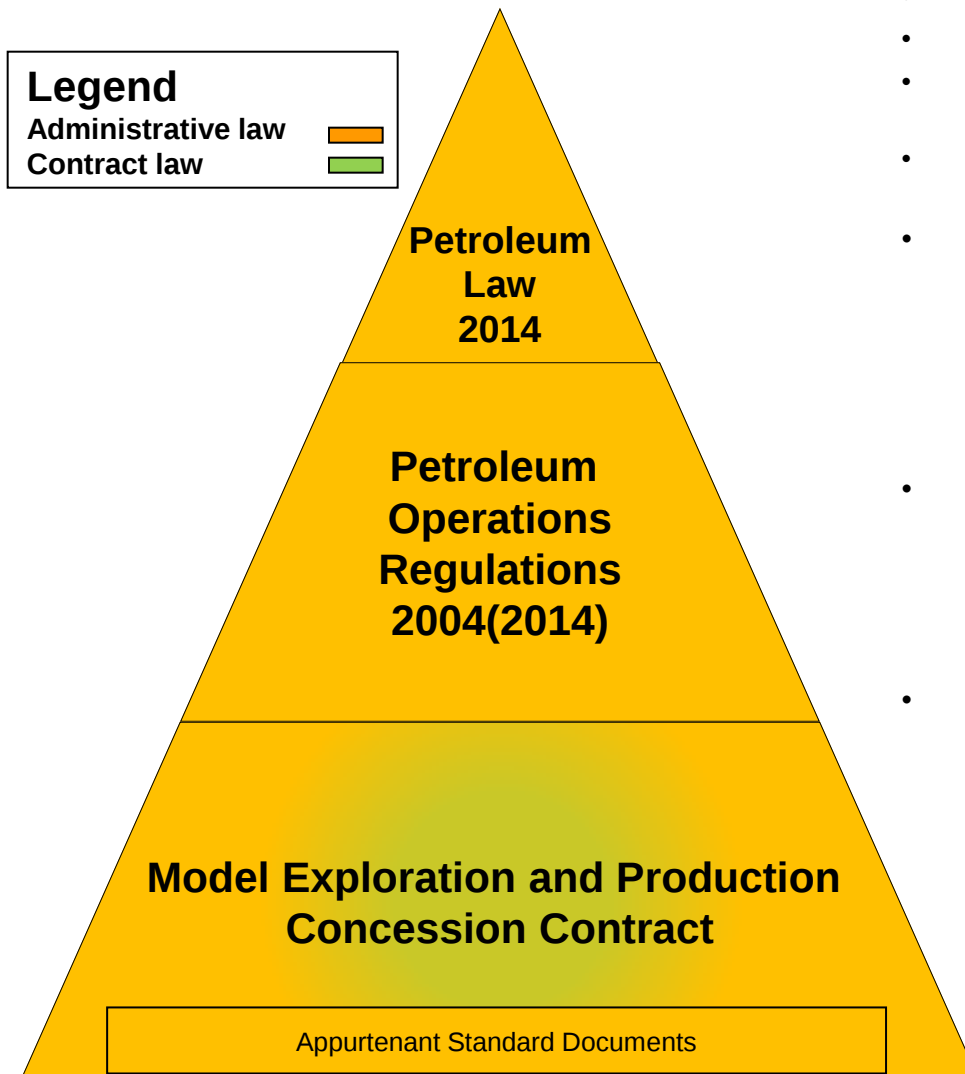
# Legal & Fiscal

# Organisational structure

The Petroleum Law of 2001 followed by the Petroleum Law of 2014 form the legal and regulatory foundation for granting rights to commercial entities allowing Petroleum Operations and establishing the governance structure clarifying roles and interests:



# MOZAMBIQUE Framework conditions



## Updated legal & regulatory structure:

- Petroleum Law 21/2014, from 18 August
- Petroleum Operation Regulations
- Updated Model Exploration and Production Concession Contract for 5th Licencing Round
- Concession Contracts only awarded to or assigned to (applicants) Concessionaires from Transparent Jurisdictions
- **Retaining requirement for EPCC standards:**
  - JOA,
  - AFP,
  - Bank Guarantee for Obligatory Work Commitments,
  - Ultimate Parent Company Guarantee for Development, Production & Decommissioning
- **Possibility to award additional Concession Contracts separately for:**
  - Reconnaissance (non-exclusive)
  - Oil Pipeline and Gas Pipeline System
  - Facilities other than those encompassed by EPCC
- **New PL 2014 rules regarding:**
  - Disclosure of extraterritorial collaboration arrangements
  - Publication of EPCC's
  - Natural Gas offtake
  - Domestic market requirement : 25% of the oil and gas produced in the national territory must be allocated to the national market
  - Role and content of ENH participation and activities
  - Local content & local communities requirements
  - Registration of companies

# Mozambican Regulatory System - EPCC

## Legend

Administrative law  
Contract law



Model EPCC 2015

Petroleum Operations  
Regulations 2014

Petroleum Law 2014

Core Elements of the Petroleum legal and regulatory structure:

- New Petroleum Law No. 21/2014 of 18 August
- Petroleum Operations Regulations established through Decree of 20 August 2004 to be amended consistent with Petroleum Law 21/2014 requirements
- Updated Model Exploration and Production Concession Contract to be updated consistent with amended Petroleum Operations Regulations
- Fiscal Law No. 27/2014, from 23 of September on Petroleum Operations

# Petroleum Legal & Regulatory Framework

## Legend

Administrative law  
Contract law



Model EPCC 2015

Petroleum Operations  
Regulations 2014

Petroleum Law 2014

- The updated Petroleum regulatory framework evolving from previous framework system and creating the basis for regulatory consistency, transparency and predictability in Mozambican Petroleum policy implementation
- New framework forms the basis for clarification of resource management responsibilities and State interests in the upstream Petroleum sector
- The Petroleum Law, Petroleum Operations Regulation and model documents:
  - Implement a more consistent legal hierarchical structure
  - Remove superfluous regulation in Model EPCC's as certain legal aspects have been incorporated in PL 2014 and will be detailed in updated POR 2014
  - Retain structure of EPCC and its appurtenant standard and required agreements and declarations

# Petroleum Legal & Regulatory Framework

## Legend

Administrative law  
Contract law



**Petroleum  
Law  
2014**

**Petroleum  
Operations  
Regulations  
2004 (2014)**

**Model Exploration and Production  
Concession Contract**

Appurtenant Standard Documents

- The updated EPCC will be subject to non-biddable or negotiable requirements such as:
  - Corporate Income and Capital Gains Tax regime that is stabilized on a time limited basis
  - Petroleum Production Tax (Royalty)
  - Production Sharing based on standard R-Factor calculation formulae
  - Standard Decommissioning Fund establishment and calculation
- EPCC bid items:
  - Duration of Exploration Period and subdivision into phases (max 8 years)
  - Obligatory work commitment and Bank Guarantee thresholds
  - Participating Interest
  - Operator
  - Production bonus
  - Training and Institutional Support
  - Decommissioning Fund minimum deposit at establishment of Fund Escrow Account

# Petroleum Operations Fiscal Regime

## New fiscal Law for Petroleum Operations, Law N°. 27/2014, of 23<sup>rd</sup> September:

### Legend

Administrative law  
Contract law



**Petroleum  
Law  
2014**

**Petroleum  
Operations  
Regulations  
2004 (2014)**

**Model Exploration and Production  
Concession Contract**

Appurtenant Standard Documents

- Applies to all Mozambican and foreign entities performing Petroleum Operations under a Concession Contract
- Corporate Income Tax at 32% to be paid in local currency
- Petroleum Production Tax (or royalty)
  - taken in kind or in cash
  - with a gross rate for Crude Oil of 10% and for Natural Gas 6%
  - Rate will be reduced if Production is for national industry use.
- Withholding tax at 10% on gross contract value
- Cost recovery ceiling 60% of the Disposable Petroleum
- Fiscal benefits

# Concession Contract Areas on Offer

Presented by:

Carlos Zacarias

INP

Exploration Manager

# Concession Contract Areas

## 1. Overview of the Areas

- Naming Convention

## 2. Technical Data

- INP Technical Data
  - Data License Agreement
  - Data Rooms
- Multi Client Data Projects Available
  - ERCL
  - Schlumberger
  - Corelab

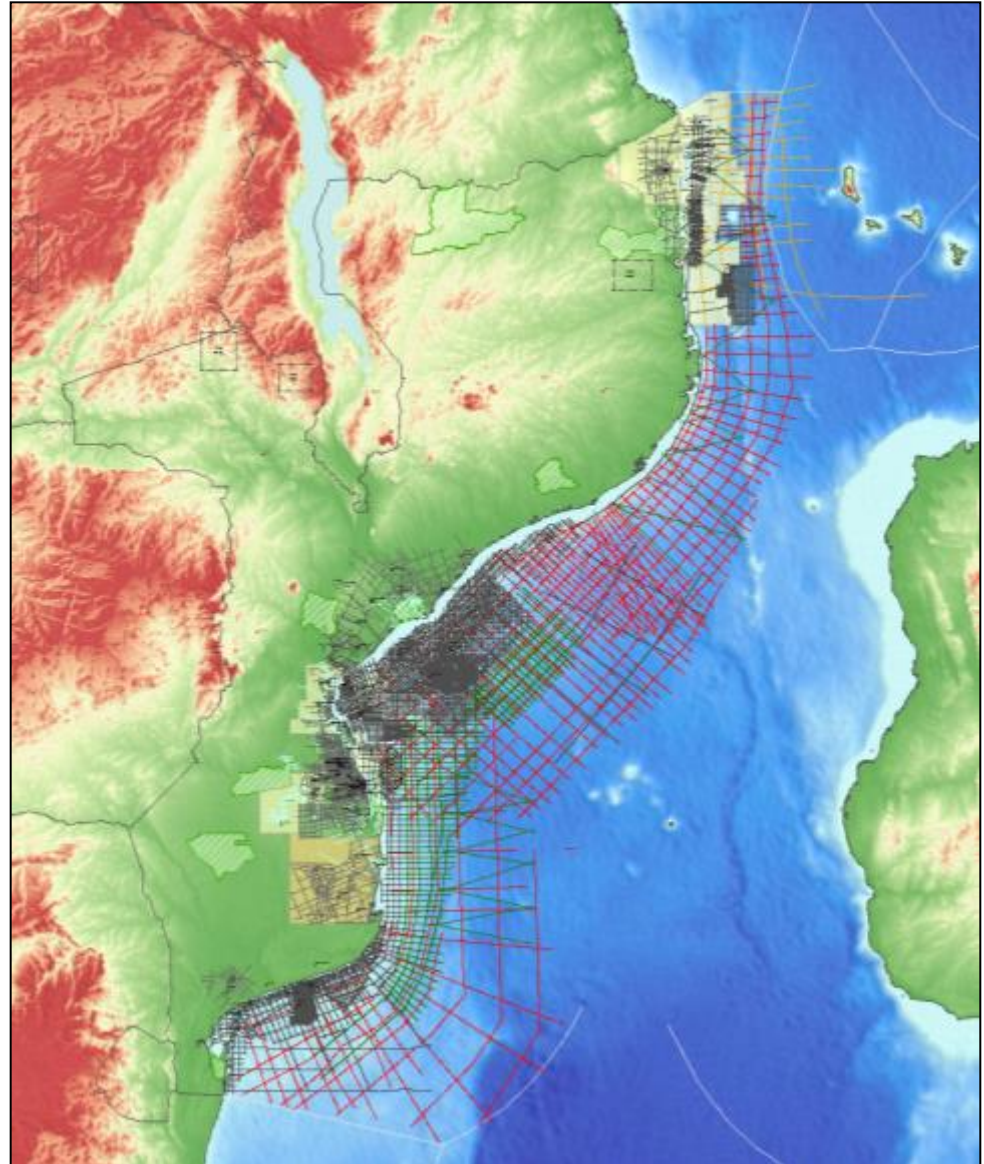
## 3. Contract Areas

- Rovuma
- Angoche
- Zambezi
- Pande / Temane Region
- Palmeria



# Areas

- **Overview of the Areas**
  - Naming Convention
- **Technical Data**
  - INP Technical Data
    - Data License Agreement
    - Data Rooms
  - Multi Client Data Projects
    - ERCL
    - Schlumberger
    - Corelab
- **Contract Areas**
  - Rovuma
  - Angoche
  - Zambezi
  - Pande / Temane Region
  - Palmeria



# Technical Reports & GIS Projects

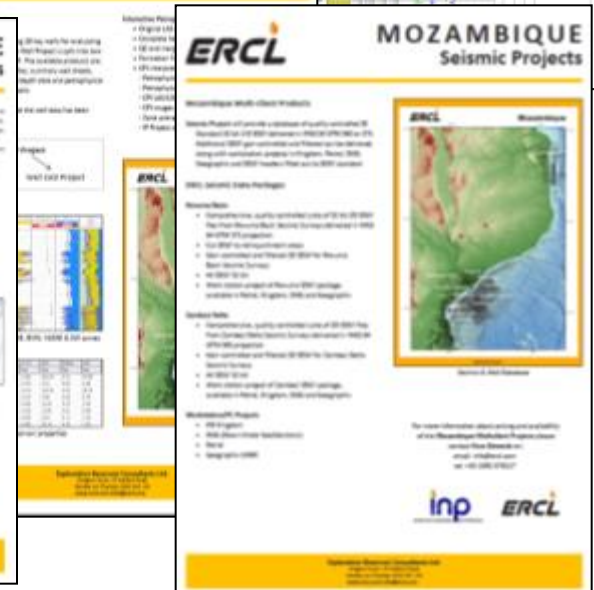
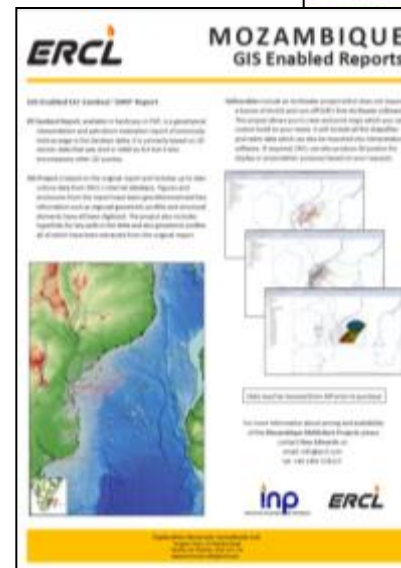
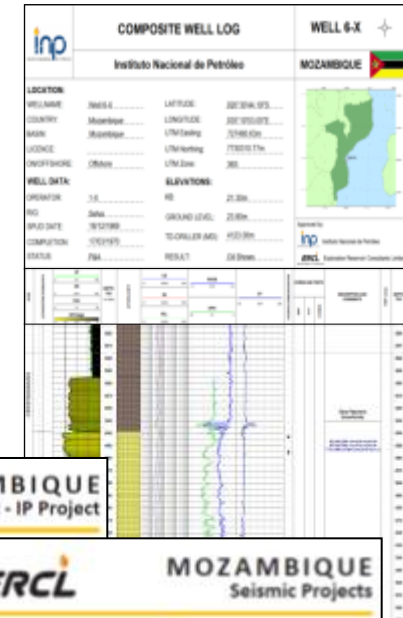
Data room in INP offices Maputo

Data room in ERCL offices (Henley-on-Thames, UK)

Under new INP Standard Master License Agreement

## Prepared in conjunction with ERCL

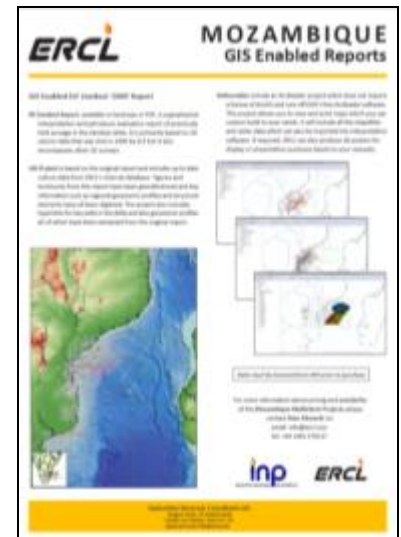
- Technical Reports
- Well Data
- Seismic Data
- GIS Projects
- Workstation Projects
- Comprehensive data listings



# GIS Regional Reports Available to License

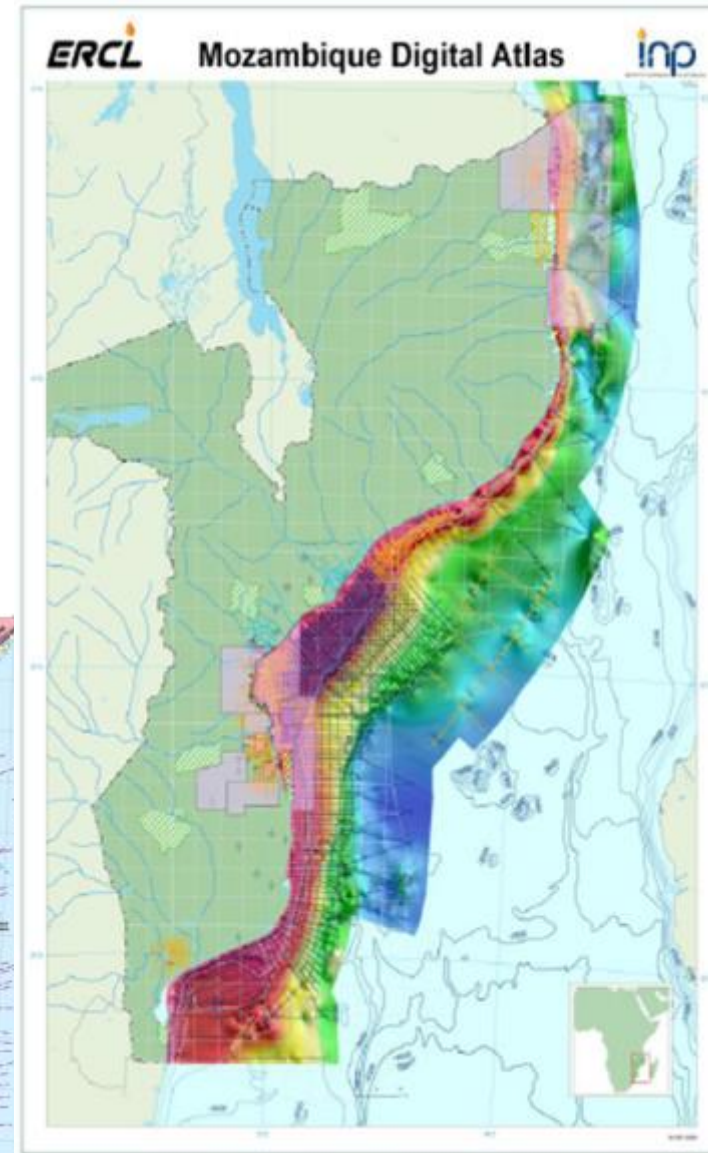
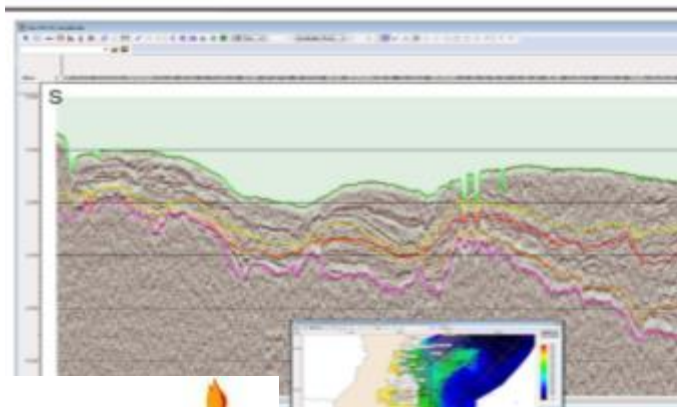
## A series of regional technical reports are available to license from INP/ERCL

- ❑ The Petroleum Geology and Hydrocarbon Prospectivity of Mozambique, ECL/ENH, 2000
- ❑ The Hydrocarbon Potential of Mozambique, Alconsult International Ltd, 1996
- ❑ The Source Rock Potential of Mozambique, Robertson Research, 1986
- ❑ Offshore Mozambique Sedimentary Basins, ENH, 1994
- ❑ Petroleum Potential in the Southern Mozambique Basin , CANOP, 1997
- ❑ Surface Geochemical Exploration, Offshore Zambezi, Petronas - TDI Brookes, 2007
- ❑ Gravity Anomalies and Flexure of the Lithosphere at the Continental Margin, BP/ENH, 1997
- ❑ An Evaluation of Prospectivity – PSA Offshore Zambezi, BP, 1999
- ❑ Interpretation Report, TEA Mozambique Channel, Elf 2000
- ❑ Evaluation of Hydrocarbon Potential, Limpopo Block, Sasol, 1997
- ❑ Hydrocarbon Potential, Cretaceous Plays, SW Offshore, Shell 1990



# MOZDA - Mozambique Digital Atlas

- **A regional framework of Mozambique**
  - Wells, Headers, Formation Tops,
  - Seismic Stratigraphic Framework
  - Key Horizons
  - Potential Field Data
- **Industry standard formats**
  - GIS
  - Kingdom
  - WEB / e-portal



# MOZDA - Well Summaries

## Well: INHAMINGA HIGH-1

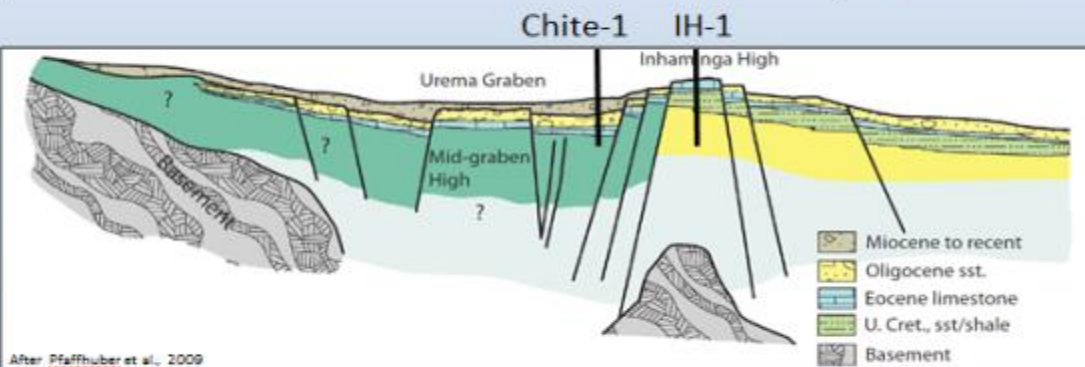


This well was spudded on 13<sup>th</sup> February 2011 by DNO Mozambique. It was the second well located on the Inhalinga Block and was located on the rift shoulder of the Urema Graben 5.3 km ESE of Chite-1.

The primary objective was the Jurassic sandstone beneath the Lupata Gorge volcanics. There is little information about these sandstones.

The secondary objective was the Cretaceous Sena Formation, which is represented by continental deposits time equivalent to the marine Domo Formation. While the Domo Formation has been encountered in earlier DNO wells, the Sena Formation was identified only in Well Corone-1, lying between the overlying Upper Grudia and the Domo Shale. Elsewhere, the Sena Formation has been penetrated in the Pande - Temane region, where porosities in the range 14 to 23% have been measured. The adjacent Domo Shale is regarded as a potential source rock for this reservoir.

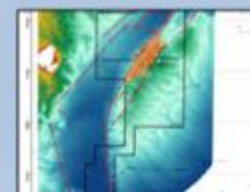
| Age       | Lithology | Thickness (m) | Depth (m) | Well             | Notes |
|-----------|-----------|---------------|-----------|------------------|-------|
| MIocene   | MIocene   | 107           | 452       | Inhalinga High-1 |       |
| OLIGOCENE | OLIGOCENE | 102           | 20        |                  |       |
| Eocene    | Eocene    | 10            | 124       |                  |       |
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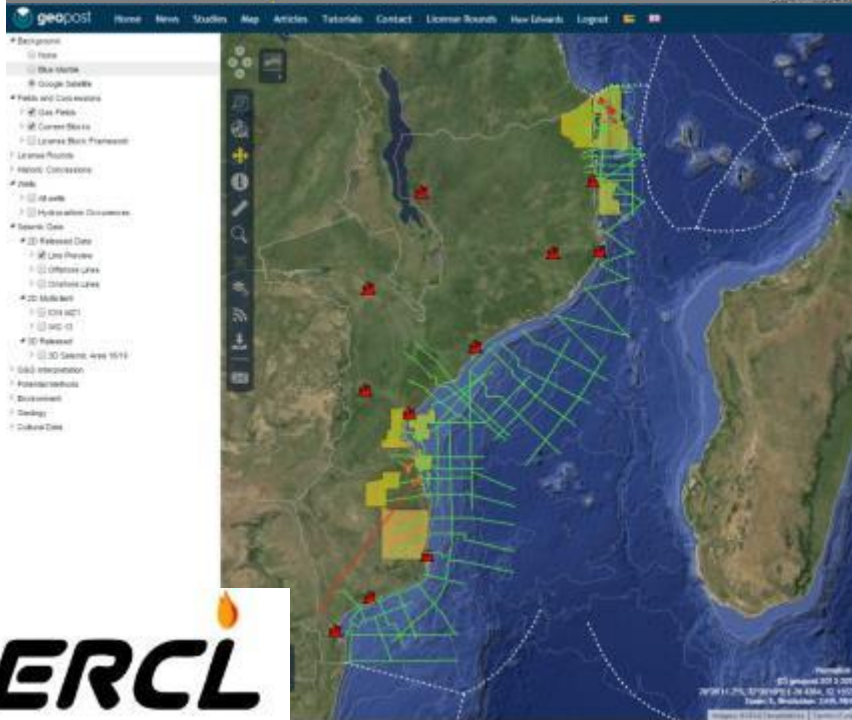


After Pfaffhuber et al., 2009

**Results:** Background gas remained very low throughout the well. The mud logger's chromatograph and FID were regularly calibrated and were regarded as being reliable. No hydrocarbon shows were observed at any point in the well. One DST was run from 451-467m in the Sena Formation but no flow to surface was achieved, consequently the well was plugged and abandoned.

The Upper Jurassic target sands were largely composed of quartz with some lithic clasts, and an argillaceous matrix. The occasional presence of calcium carbonate nodules (Caliche) suggests a semi-arid environment. It is likely these sands represent outwash fans. The porosity and permeability were generally poor because of the argillaceous matrix.



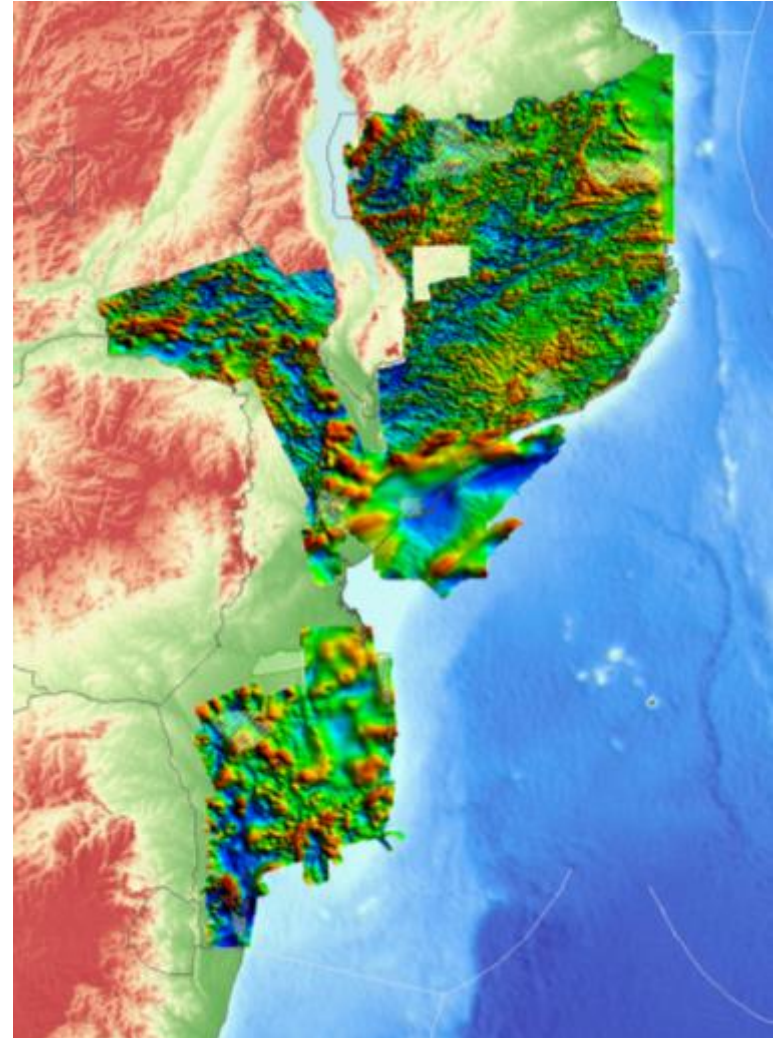


- SEG Y
- Link Wells

(Mozambique Digital Atlas)

# MOZDA – Regional Potential Field Data

- Regional potential field data
  - Published satellite data
  - Published gravity data (Sandwell & Smith)
  - Compiled airborne, land and marine gravity
  - Compiled airborne, land and marine magnetics
  - G&M profiles for selected regional seismic composite lines
- Delivered within GIS as image and grid files



Well Data is available to license from INP:

## 1. INP / ERCL

- 79 Released Wells
- New Well Summary Sheets
- New Well Composites
- New HQ LAS Files
- New IP Petrophysics

## 2. Core Lab

- Regional Reservoir and Seal Study of the Basins of Mozambique

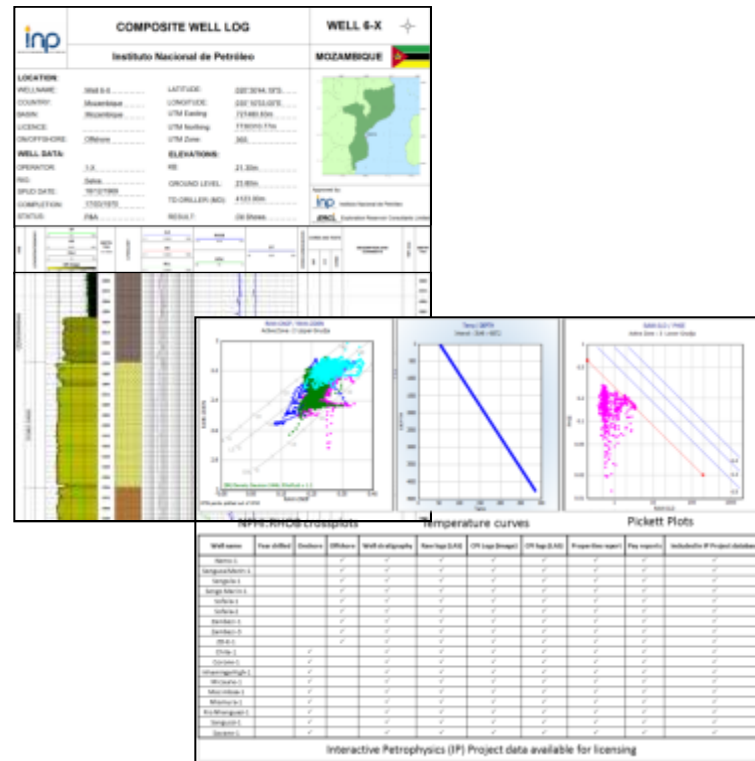


## BASIC PACKAGE

- Well Summary Sheet
- Composite Log
- Digital LAS data
- Time depth data
- Synthetic well ties

(where data is available)

- Reports/documents pertinent to the Well; including Final Well Reports (FWR), Engineering Reports, Contractor Reports
- Petrophysics
- Special Well Analysis
- Core



# Key Wells

| Well name        | Year drilled | Operator   |
|------------------|--------------|------------|
| Chite-1          | 2010         | DNO        |
| Corone-1         | 2004         | DNO ASA    |
| Inhaminga High-1 | 2011         | DNO ASA    |
| Micaune-1        | 1966         | Gulf       |
| Mocimboa-1       | 1986         | Esso/Shell |
| Nhamura-1        | 1971         | Aquitaine  |
| Rio Nhanguazi-1  | 1971         | Aquitaine  |
| Sangussi-1       | 2008         | DNO ASA    |
| Savane-1         | 2004         | DNO ASA    |

## 9 Onshore key wells

| Well name        | Year drilled | Operator          |
|------------------|--------------|-------------------|
| Nemo-1X          | 1969         | Gulf Oil          |
| Njika-1          | 2008         | Sasol Petroleum   |
| Njika-2          | 2009         | Sasol Petroleum   |
| Sangussi Marin-1 | 1971         | Aquitaine         |
| Sengala-1        | 2000         | Sasol Petroleum   |
| Sengo Marin-1    | 1971         | Aquitaine         |
| Sofala-1         | 1970         | Gulf Oil          |
| Sofala-2         | 2000         | Sasol Petroleum   |
| Zambezi-1        | 1970         | Hunt Petroleum    |
| Zambezi-3        | 1971         | Hunt Petroleum    |
| Z-DE-1           | 2007         | Petronas Carigali |

## 11 Offshore key wells

# RESERVOIRS AND SEALS STUDY

Regional rock-based study – unique data package covering:

## 1. Reservoir Geology

- Reservoir description
- Reservoir quality and properties (core analysis, petrography ts/xrd/sem, rock-typing)
- Petrophysical log analysis

## 2. Seals

- Evaluation of lithological properties and sealing capacity

## 3. Stratigraphy

- Lithostratigraphy
- Biostratigraphy
- Cyclostratigraphy

A JOINT STUDY BY INP AND CORE LABORATORIES



# RESERVOIRS AND SEALS STUDY

## Deliverables:

- Integrated Regional Report
- GIS Enabled Database
- Digital Data Set
- HTML Browser Version
- RAPID Database
- ODM Database
- Final Presentation/Workshop



**Core Laboratories Integrated Reservoir Solutions**



Seismic Data is available to license from 3 parties:

## 1. INP / ERCL

- Oil Company released seismic data original processing
- Oil Company reprocessed released seismic data
- INP Regional composite seismic lines Onshore / Offshore

## 2. ION

- MC Seismic 2011 (Regional SPAN seismic - Rovuma Area)

## 3. SCHLUMBERGER

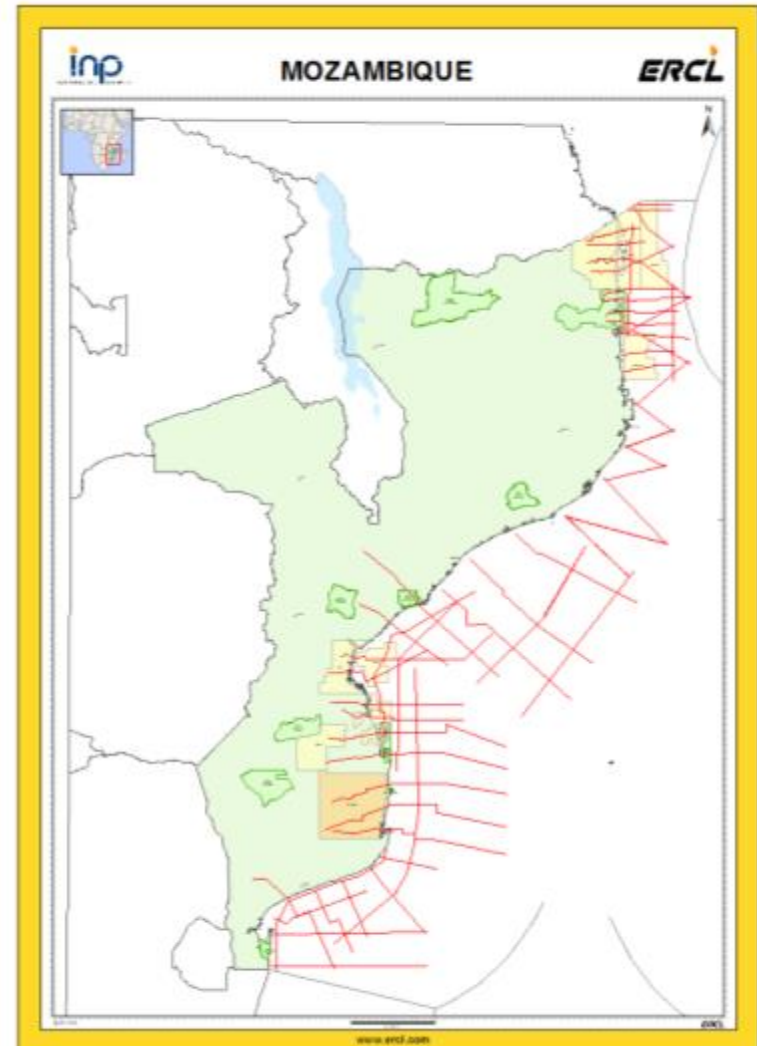
- MC Seismic 2013 Regional Survey
- Brokered Seismic Reprocessed Seismic



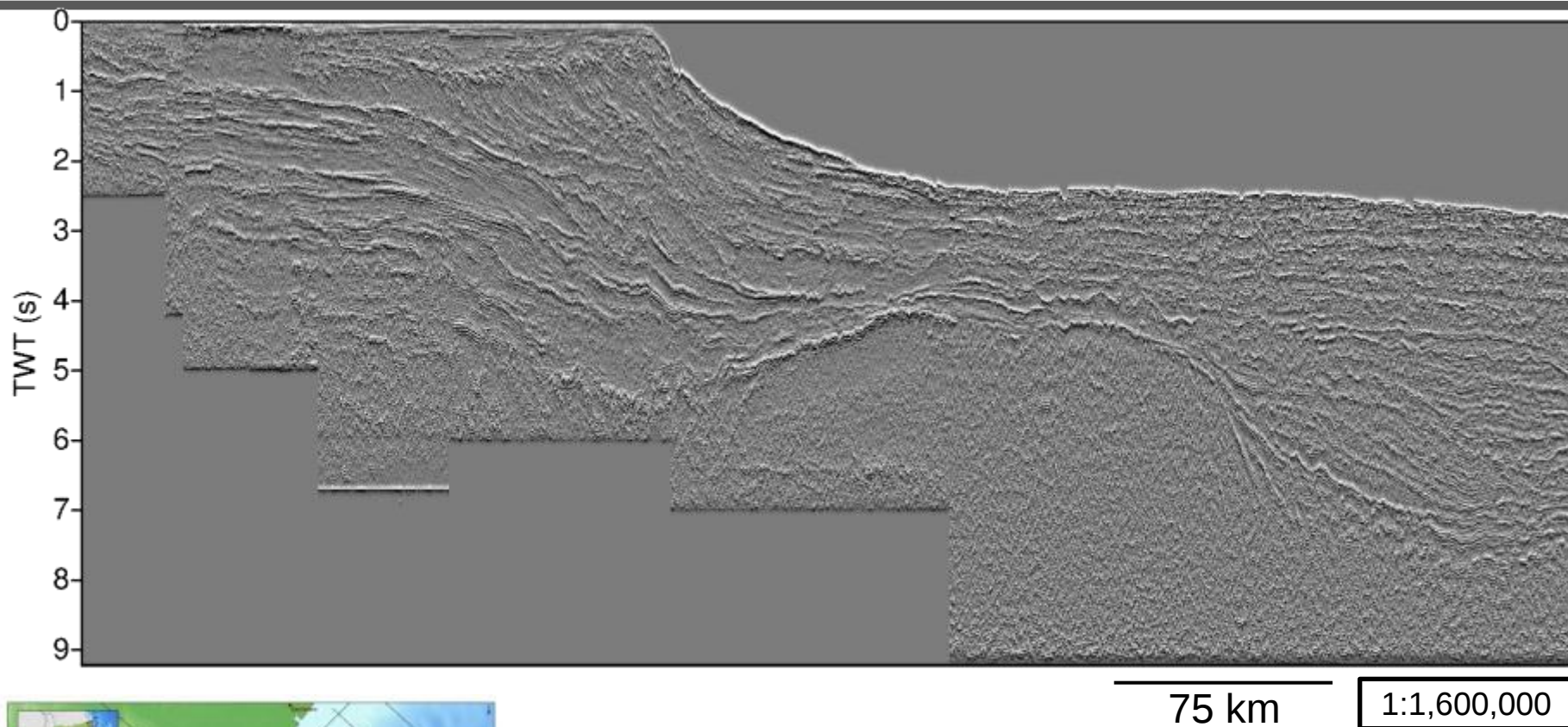
- Available for review in Data Rooms

# MOZDA – Regional Composite Lines

- Regional composite profiles
  - Onshore-offshore lines, over 50 profiles and over 16,500 kms 2D seismic
  - Provide regional Seismic Stratigraphic Framework
  - Five regional horizons
  - Composite lines vary from 90 to 735 kms in length
- Industry standard formats
  - SEG Y for composite lines
  - Interpreted horizons available as grid files
  - Geoseismic sections
- Selected in collaboration with INP
- Discounted fees for volume purchases

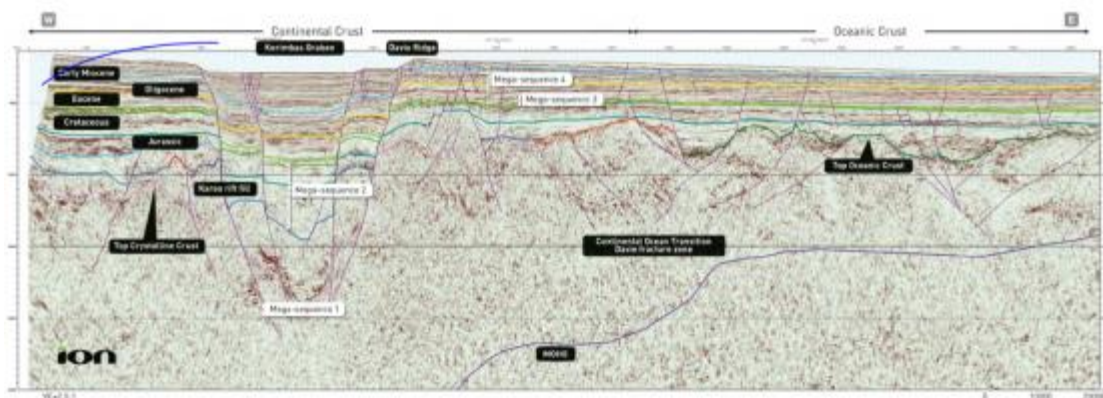
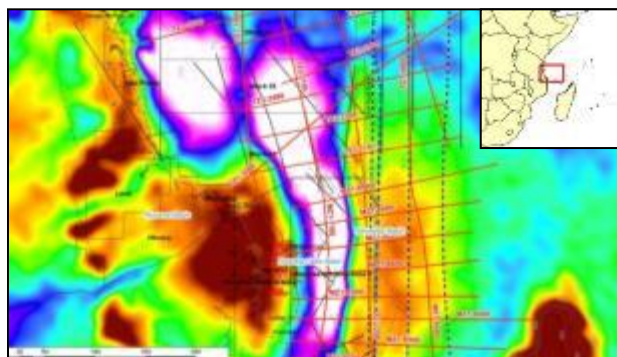


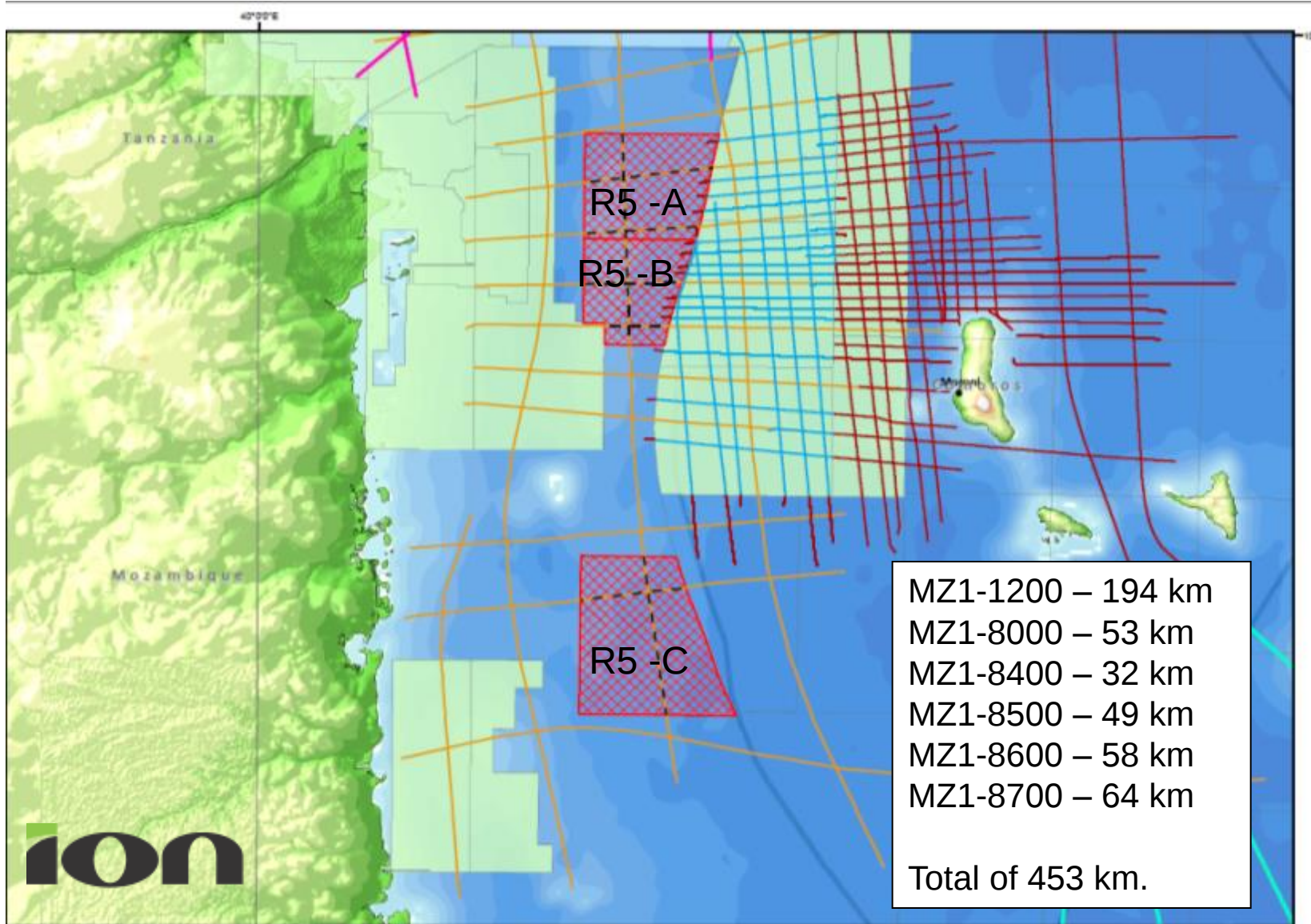
# MOZDA – INP Composite Line INP-32



On behalf of The Government of Mozambique , ION Geoventures is offering 2477 kms of 2D SPAN seismic data acquired in 2011 as part of the EAST AFRICA Geological Study of Mozambique, Kenya, Tanzania, Madagascar, Comoros and the Seychelles

- SPAN Data is characterized by regional lines of long offset (10 kms ) and long record (18 seconds) data.
- Pre stack time and pre stack depth Migration
- Gravity and magnetic data







# Multi-Client Seismic Data



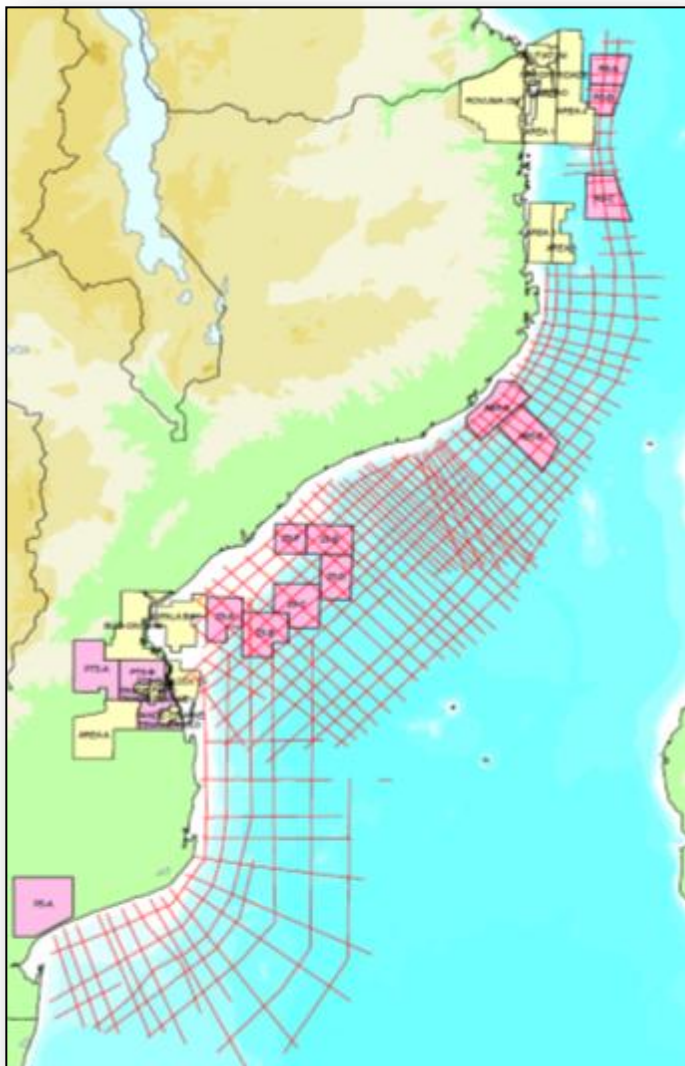
## **Data License Fee includes following data deliverables:**

- Seismic data: Pre Stack Time Migration , Pre Stack Depth Migration
- PSDM Depth Interval Velocity Model
- PSTM Velocity Model
- PSTM Angle Stacks
- PSTM, PSDM Gathers
- RMO PSTM, PSDM Gathers
- Acquisition and Data Processing Report
- Raw and final Navigation data
- Final Interpretation Report
- Gravity and Magnetics Data



→Charged to innovate. Driven to solve.

# Schlumberger MC 2D Survey (MBWG13)



## Key Acquisition Parameters

|                       |                             |
|-----------------------|-----------------------------|
| Total Km              | 36,179.6 Km                 |
| Streamer Length       | 10,300 m                    |
| Streamer Depth        | ObliQ* (8-35 m)             |
| Source                | Delta Source 6-9-6 m        |
| Shot Point Interval   | 25 m                        |
| Record length         | 12 Sec (Continuous)         |
| Gravity and Magnetics | Acquired during Acquisition |

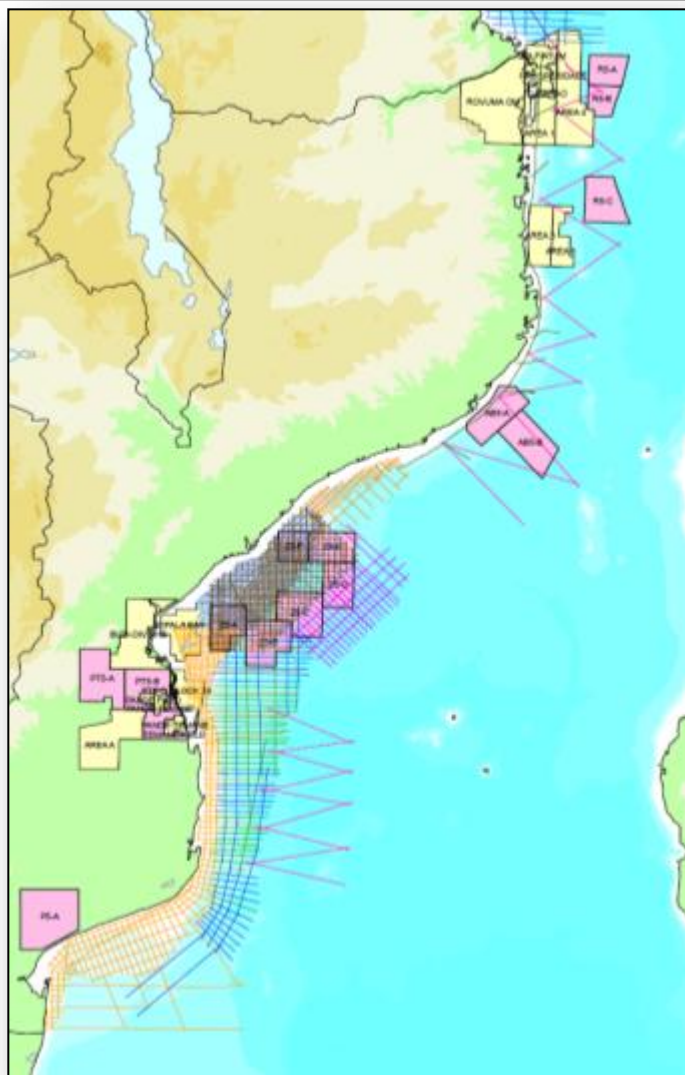
## Processing Sequence Highlights

Single Streamer Deghosting  
2D Surface Multiple Prediction  
Weighted Least Square (WLS) Radon  
2D anisotropic TTI Kirchhoff pre-stack time migration  
Dense Spatially Continuous Velocity Analysis  
Angle stacks and Inversion ready gathers

## Deliverables available

2D Anisotropic Kirchhoff pre-stack time migration  
Migration and stacking velocities  
Navigation  
Four Angle stacks (Near, Mid, Far and Ultra Far)  
Acquisition and processing reports  
Gravity and Magnetic data  
Pre and post migration gathers

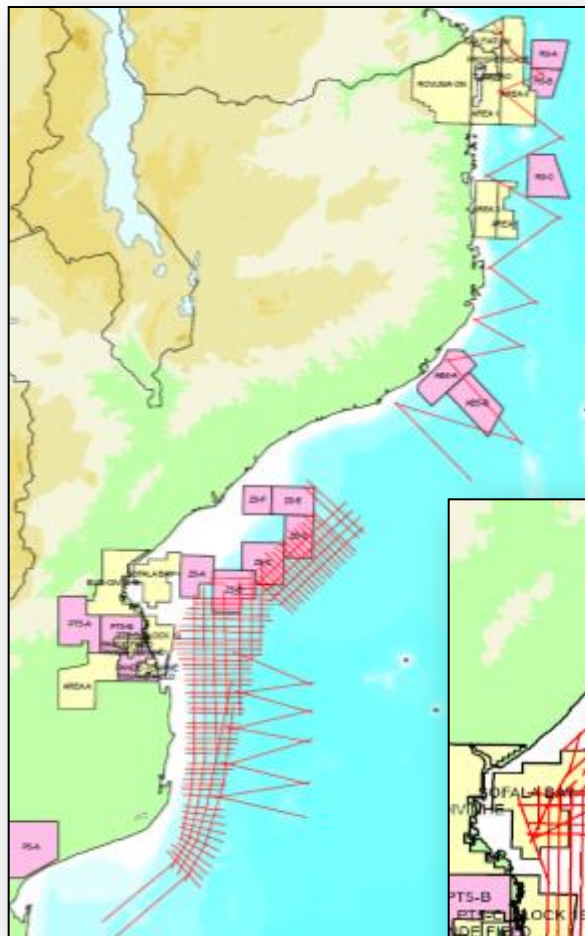
# Schlumberger Multiclient Broker Data



**Schlumberger**

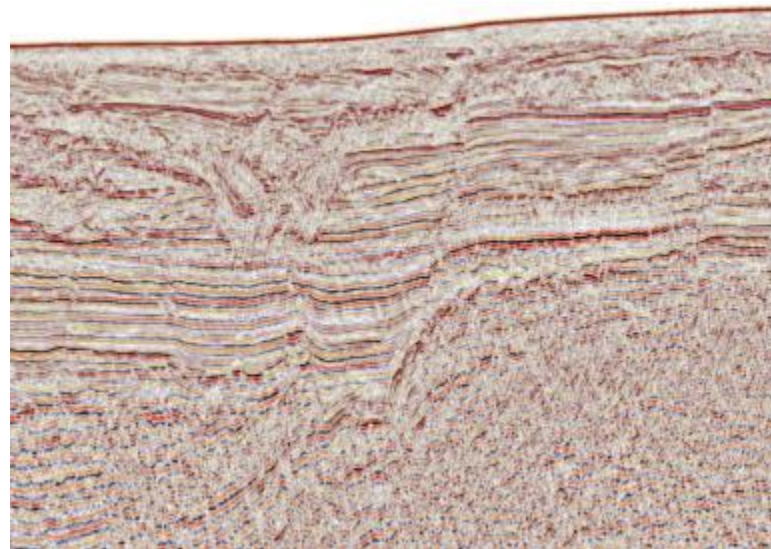
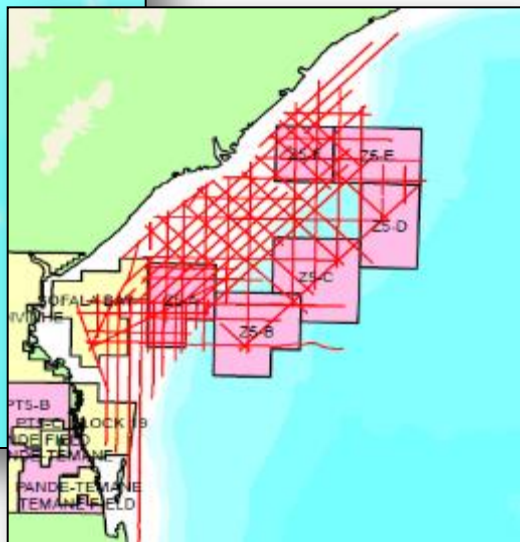
| Survey Name         | SM81   | BP98   | GMR     | GMC81  |
|---------------------|--------|--------|---------|--------|
| Year of Acquisition | 1981   | 1998   | 1981/82 | 1981   |
| Number of line Km   | 12,788 | 10,278 | 610     | 11,189 |
| Record Length (s)   | 7      | 8      | 6       | 6      |
| Sample Rate (ms)    | 4      | 2      | 2       | 2      |
| Cable Length (m)    | 3000   | 5000   | 2400    | 2400   |
| Fold                | 30     | 100    | 48      | 48     |
| Group Interval (m)  | 50     | 12.5   | 25      | 25     |

| Survey Name         | MBWG98 | MBWG99 | MBWG00 |
|---------------------|--------|--------|--------|
| Year of Acquisition | 1998   | 1999   | 2000   |
| Number of line Km   | 4985Km | 7222Km | 3637Km |
| Record Length (s)   | 9216   | 9216   | 10     |
| Sample Rate (ms)    | 2ms    | 2ms    | 2ms    |
| Cable Length (m)    | 5100   | 5100   | 6000   |
| Fold                |        |        | 120    |
| Group Interval (m)  | 12.5   | 12.5   | 12.5   |

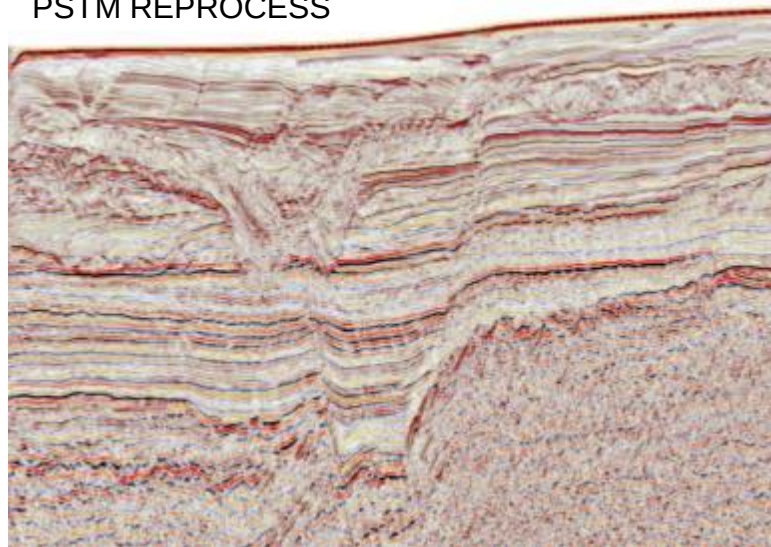


Phase I Completed 2012  
Total 15,846 Km  
Surveys MBW 98/99/00

Phase II Completed 2014  
Total 9,200 Km  
Sub-Set of Surveys  
BP98/GMC81/SM81



PSTM REPROCESS



## 1. Overview of the Contract Areas

- Naming Convention

## 2. Technical Data

- INP Technical Data
  - Data License Agreement
  - Data Rooms
- Multi Client Data Projects Available
  - ERCL
  - Schlumberger
  - Corelab

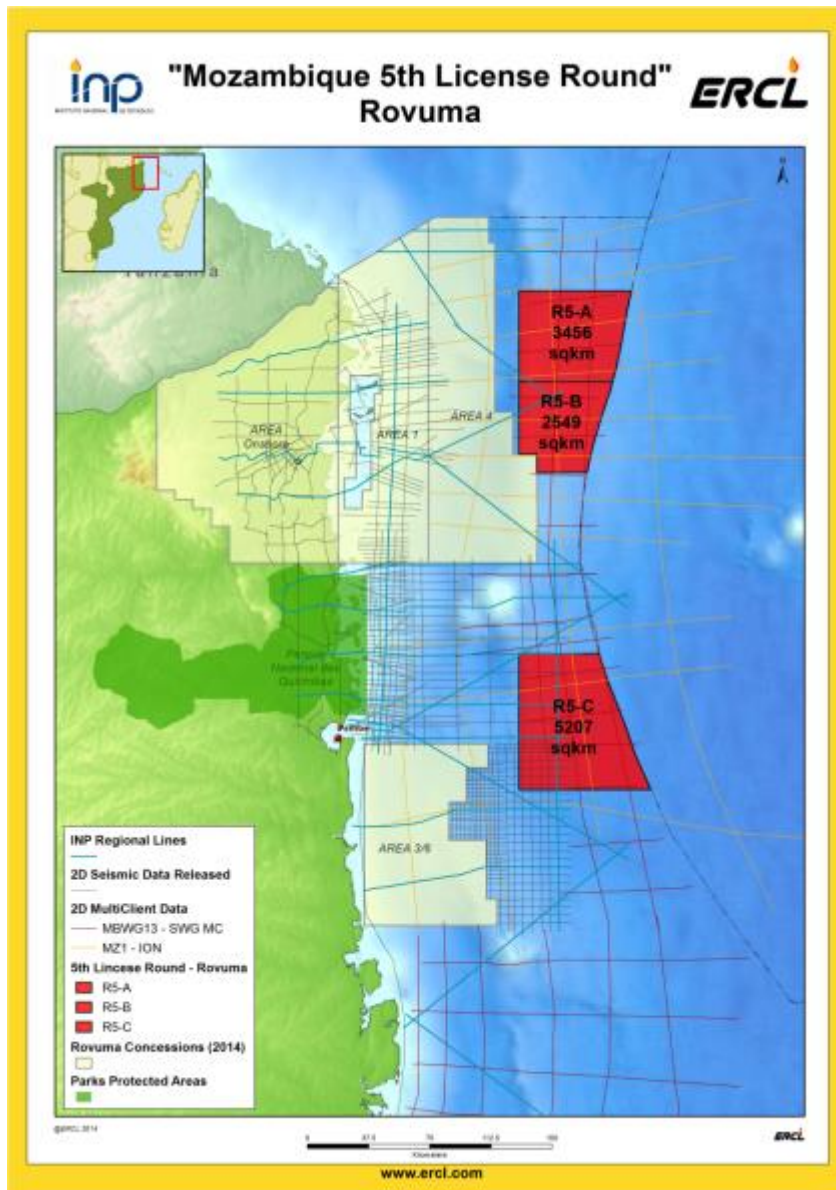
## 3. Contract Areas

- Rovuma
- Angoche
- Zambezi
- Pande / Temane Region
- Palmeria

# Rovuma Basin

## 3 Areas

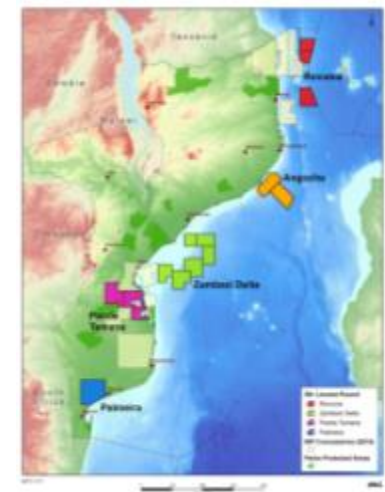
### 11,212 Km<sup>2</sup>



R5-A = 3,456 Km<sup>2</sup>

R5-B = 2,549Km<sup>2</sup>

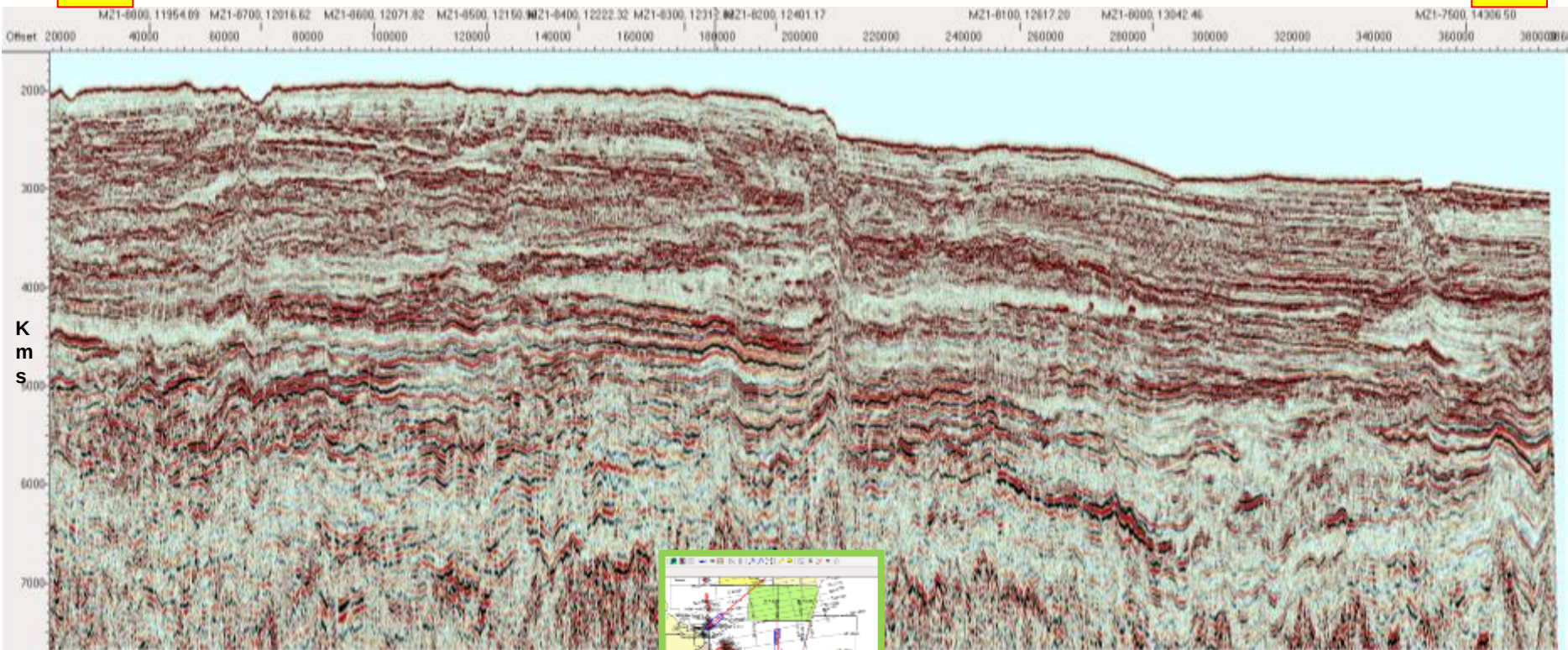
R5-C = 5,207 Km<sup>2</sup>



# R5-A-B-C Strike Line (Depth Section)

N

S

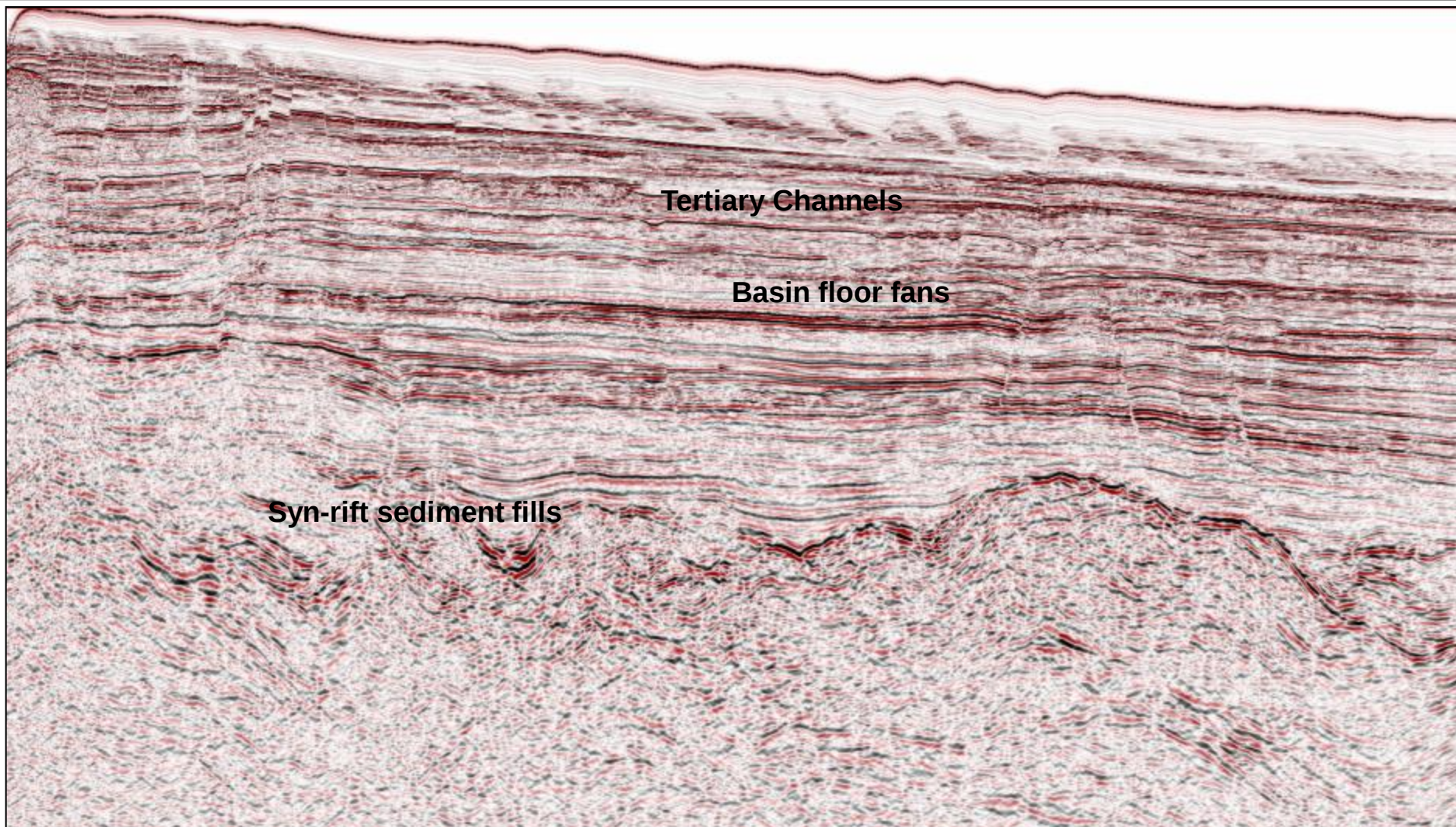


R5-A

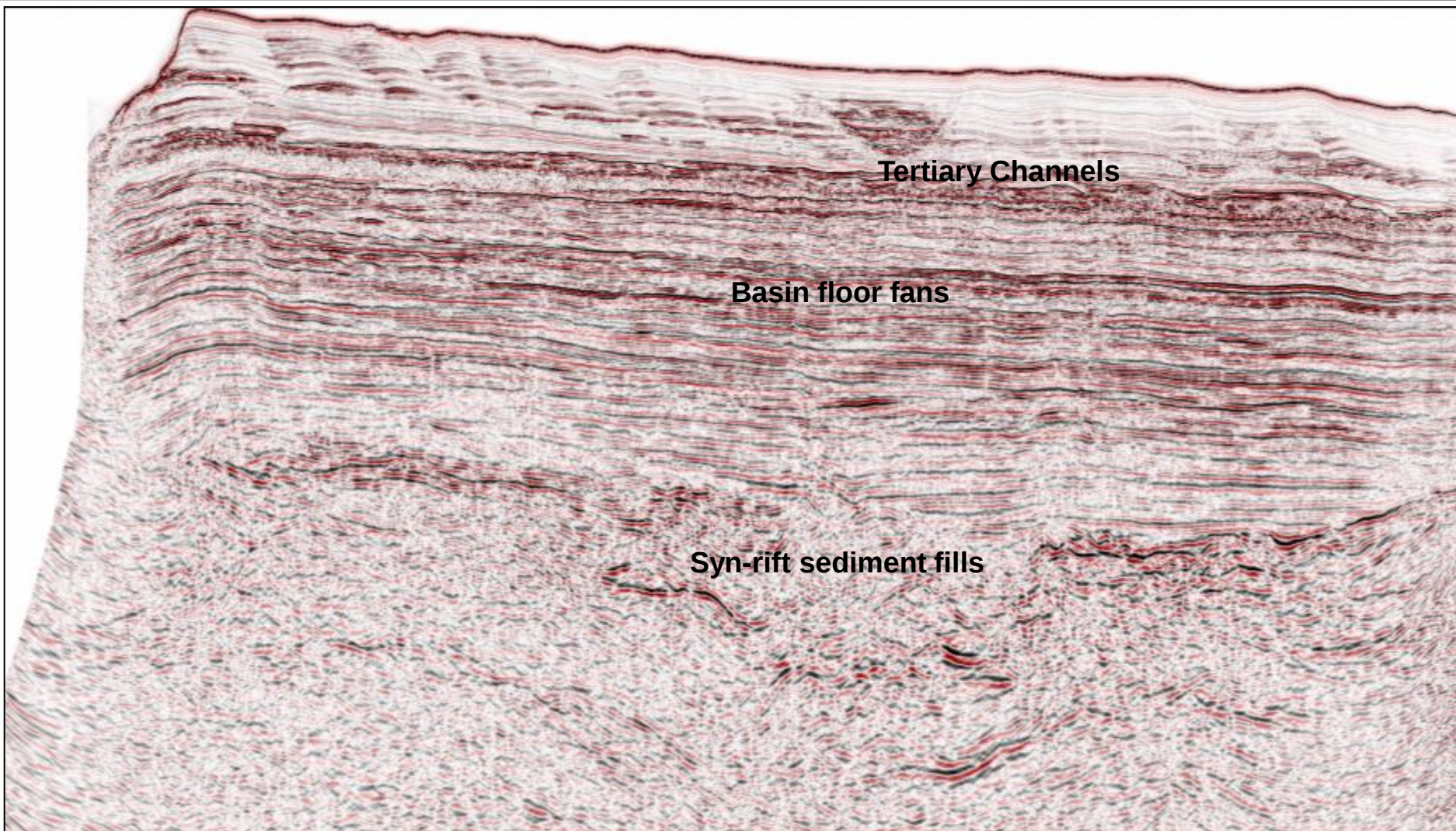
R5-B

R5-C

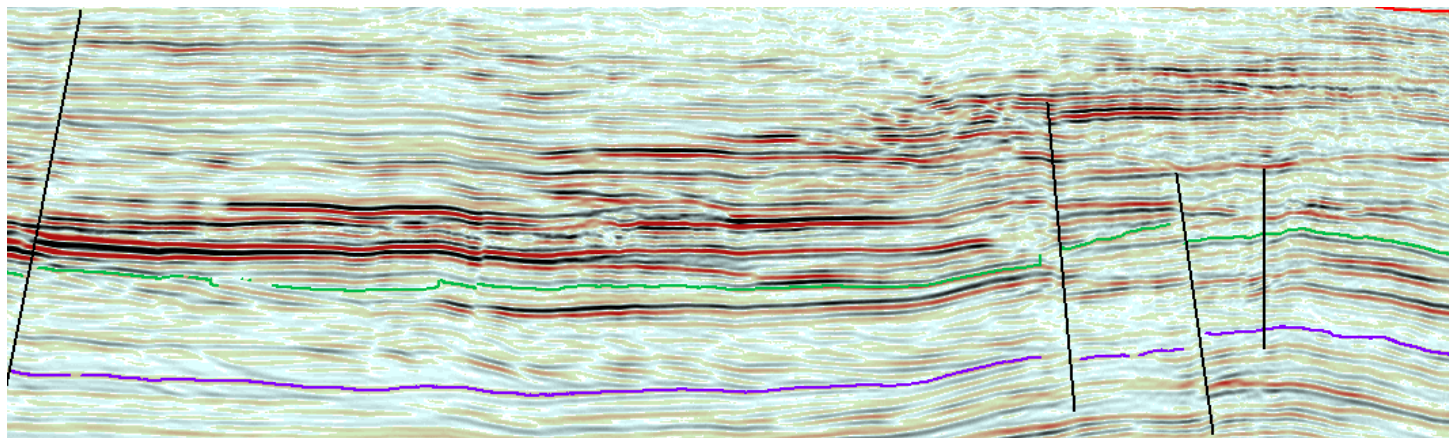
# R5-A Dip Line (MBW13)



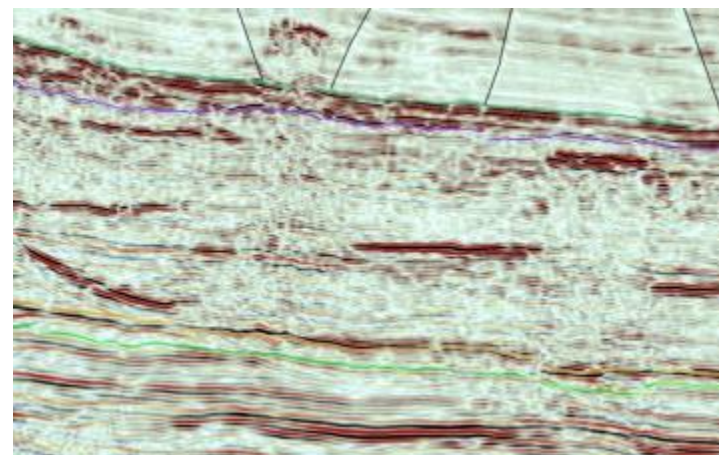
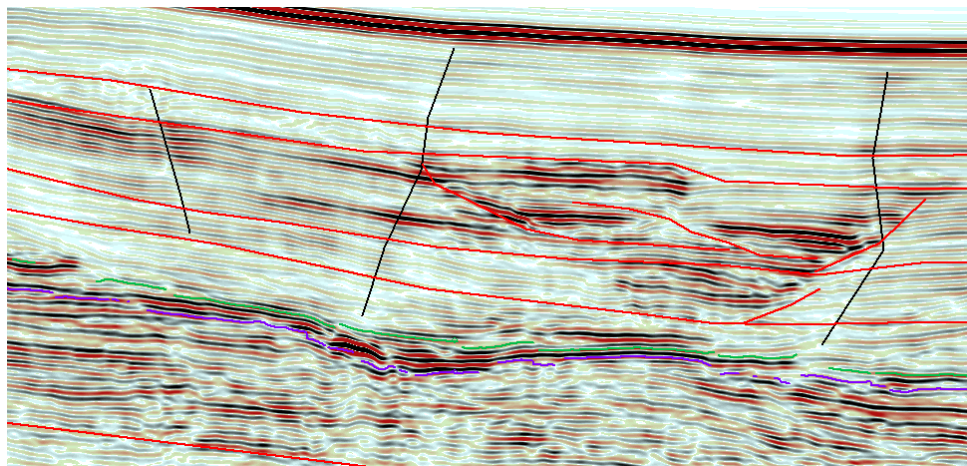
# R5-B Dip Line (MBW13)



# R5-C Oil Company released seismic data



- Early Miocene Unc
- Oligocene Unc
- Early Eocene Unc
- Base Tertiary Unc
- Early Cretaceous Unc.
- Top Jurassic
- Top Karoo
- Top Basement



# Rovuma

# R5-A

# 3,456 Km<sup>2</sup>



| MINIMUM WORK PROGRAM |               |       |        |
|----------------------|---------------|-------|--------|
| Period 1             | 2D Seismic    | 2,500 | Km     |
| Period 1             | 3D Seismic    | 1,000 | Sq. Km |
| Period 1             | Well          | 0     |        |
| Period 1             | Other Studies | 5     | M\$    |
| Period 2             | Well          | 1     |        |
| Period 2             | Other Studies | 5     | M\$    |
| Period 3             | Well          | 1     |        |
| Period 3             | Other Studies | 5     | M\$    |

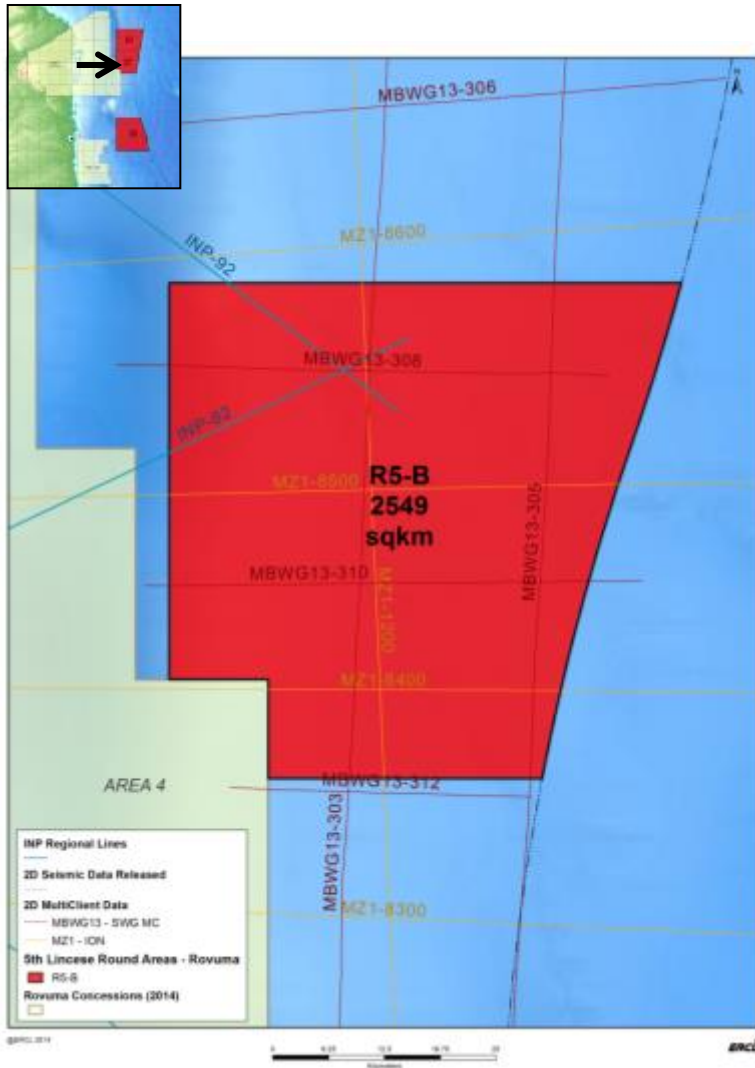
NOTE: The 2D seismic minimum program could be offset against an increased 3D seismic commitment.

| CURRENT SEISMIC DATA IN R5-A |        | km  |
|------------------------------|--------|-----|
| Schlumberger                 | MBWG13 | 225 |
| ION                          | MZ1    | 155 |
| INP Regional                 | INP    | 144 |
| Brokered                     | Other  | 33  |
| TOTAL                        |        | 557 |

# Rovuma

# R5-B

# 2,549 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

|          |               |            |  |
|----------|---------------|------------|--|
| Period 1 | 2D Seismic    | 2,000 Km   |  |
| Period 1 | 3D Seismic    | 500 Sq. Km |  |
| Period 1 | Well          | 0          |  |
| Period 1 | Other Studies | 5 M\$      |  |
| Period 2 | Well          | 1          |  |
| Period 2 | Other Studies | 5 M\$      |  |
| Period 3 | Well          | 1          |  |
| Period 3 | Other Studies | 5 M\$      |  |

NOTE: The 2D seismic minimum program could be offset against an increased 3D seismic commitment.

| CURRENT SEISMIC DATA R5-B |        | km  |
|---------------------------|--------|-----|
| Schlumberger              | MBWG13 | 206 |
| ION                       | MZ1    | 185 |
| INP Regional              | INP    | 60  |
| Brokered                  | Other  | 342 |
| TOTAL                     |        | 793 |

**5,207 Km<sup>2</sup>**

| MINIMUM WORK PROGRAM |               |       |        |
|----------------------|---------------|-------|--------|
| Period 1             | 2D Seismic    | 7,500 | Km     |
| Period 1             | 3D Seismic    | 1,000 | Sq. Km |
| Period 1             | Well          | 0     |        |
| Period 1             | Other Studies | 5     | M\$    |
| Period 2             | Well          | 1     |        |
| Period 2             | Other Studies | 5     | M\$    |
| Period 3             | Well          | 1     |        |
| Period 3             | Other Studies | 5     | M\$    |

NOTE: The 2D seismic minimum program could be offset against an increased 3D seismic commitment.

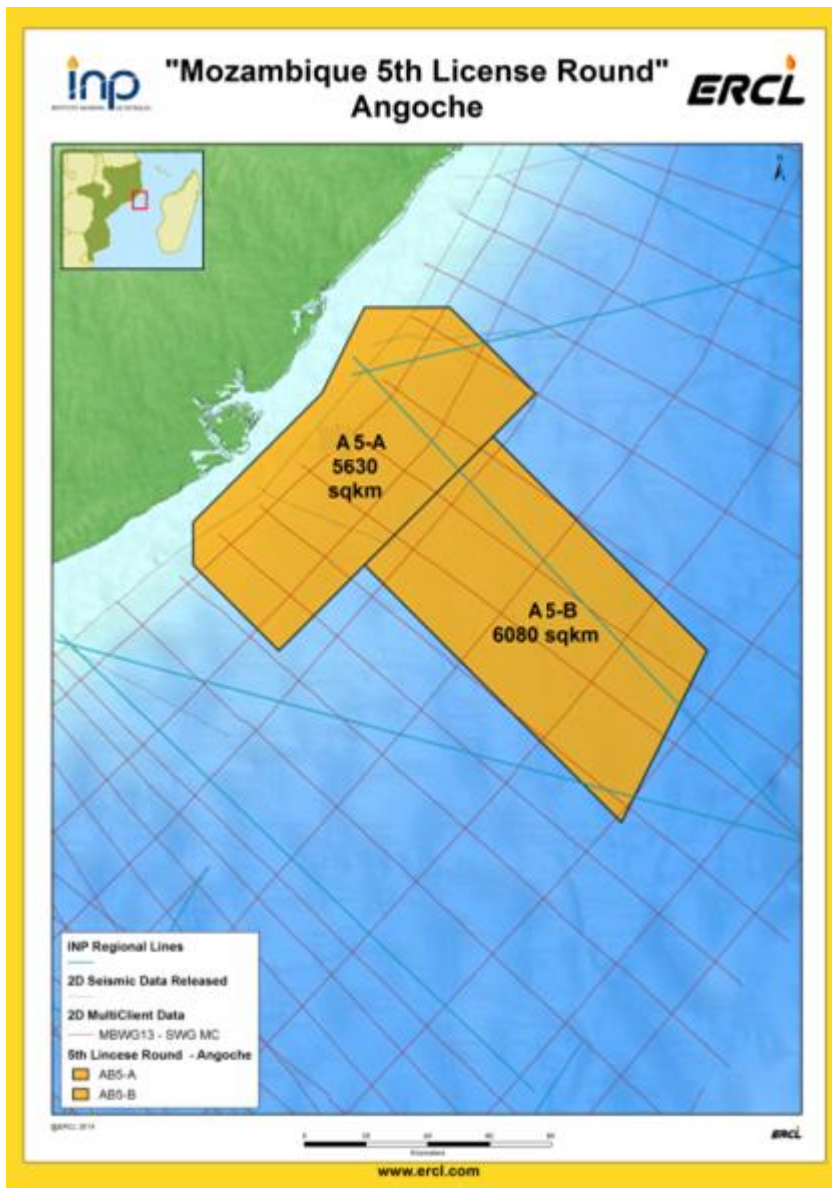
| CURRENT SEISMIC DATA R5-C |        | km    |
|---------------------------|--------|-------|
| Schlumberger              | MBWG13 | 405   |
| ION                       | MZ1    | 141   |
| INP Regional              | INP    | 523   |
| Brokered                  | Other  | 651   |
|                           | TOTAL  | 1,720 |

km

# Angoche Basin

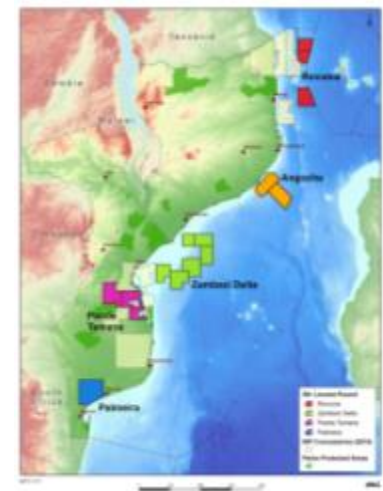
## 2 Areas

### 11,710 Km<sup>2</sup>



A5-A = 5,630 Km<sup>2</sup>

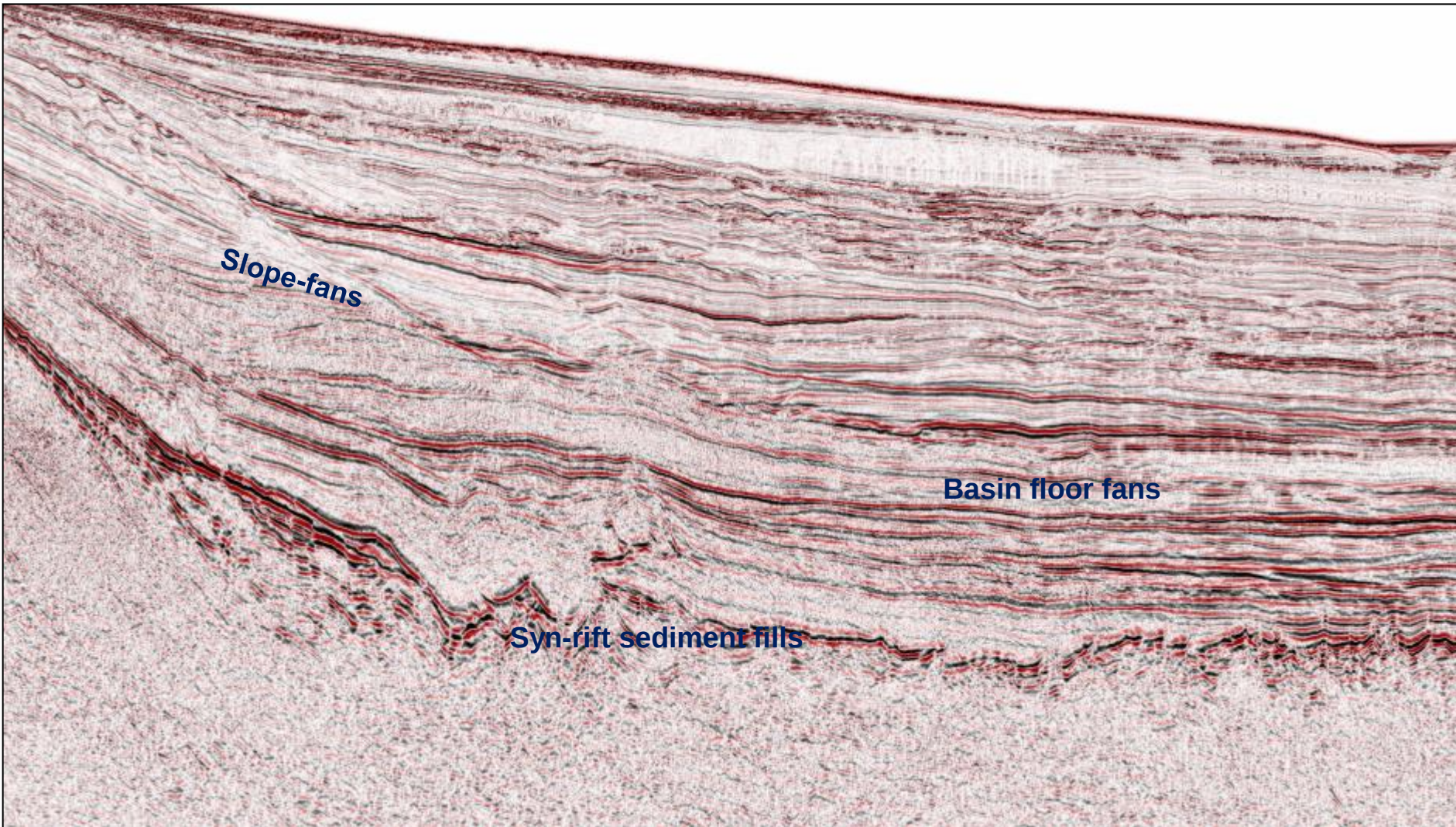
A5-B = 6,080 Km<sup>2</sup>



A5 - A,B

Dip Line

(MBW13)





## MINIMUM WORK PROGRAM

|          |               |       |        |
|----------|---------------|-------|--------|
|          |               |       |        |
| Period 1 | 2D Seismic    | 7,500 | Km     |
| Period 1 | 3D Seismic    | 1,000 | Sq. Km |
| Period 1 | Well          | 1     |        |
| Period 1 | Other Studies | 3     | M\$    |
|          |               |       |        |
| Period 2 | Well          | 1     |        |
| Period 2 | Other Studies | 10    | M\$    |
|          |               |       |        |
| Period 3 | Well          | 1     |        |
| Period 3 | Other Studies | 5     | M\$    |
|          |               |       |        |

NOTE: The 2D seismic minimum program could be offset against an increased 3D seismic commitment.

## CURRENT SEISMIC DATA A5-A

|              |        |       |
|--------------|--------|-------|
| Schlumberger | MBWG13 | 468   |
| INP Regional | INP    | 370   |
| Brokered     | Other  | 226   |
|              | TOTAL  | 1,064 |

# Angoche

# A5-B

# 6,080 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

|          |               |       |        |
|----------|---------------|-------|--------|
| Period 1 | 2D Seismic    | 7,500 | Km     |
| Period 1 | 3D Seismic    | 1,000 | Sq. Km |
| Period 1 | Well          | 1     |        |
| Period 1 | Other Studies | 3     | M\$    |
| Period 2 | Well          | 1     |        |
| Period 2 | Other Studies | 10    | M\$    |
| Period 3 | Well          | 1     |        |
| Period 3 | Other Studies | 5     | M\$    |

NOTE: The 2D seismic minimum program could be offset against an increased 3D seismic commitment.

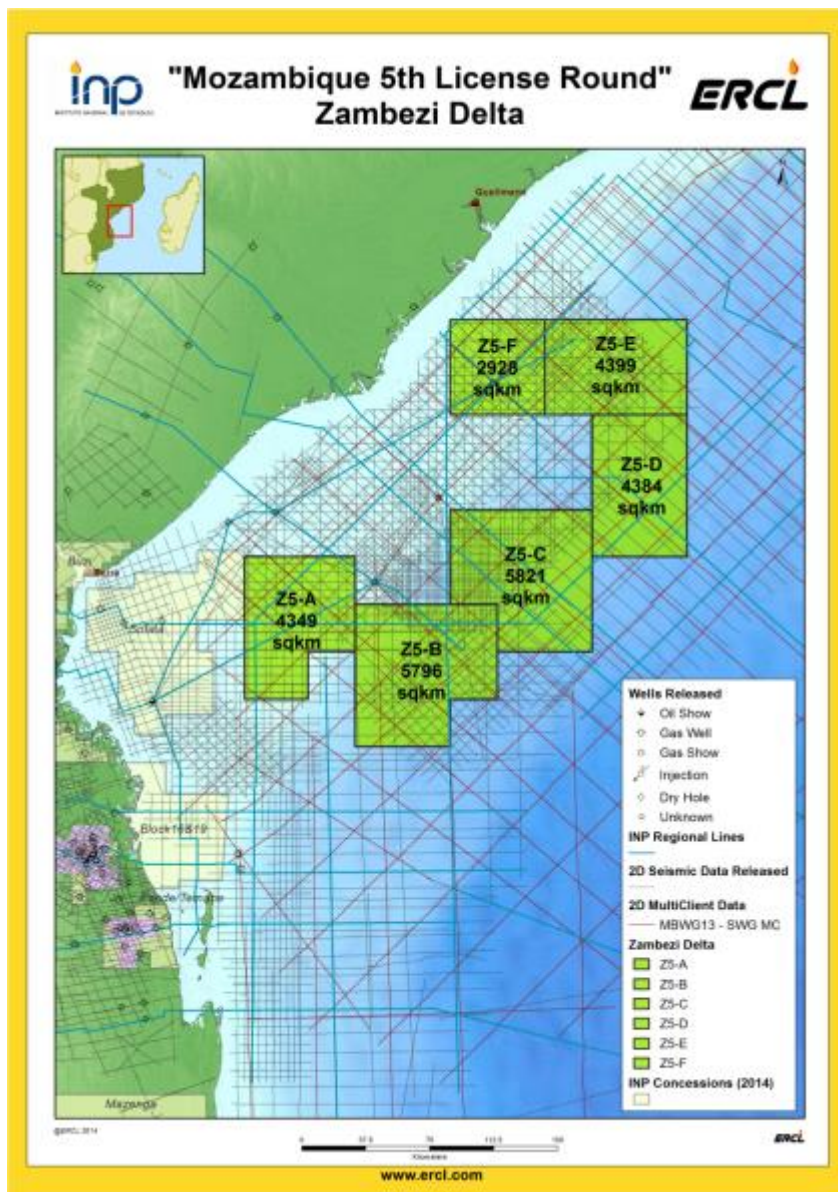
## CURRENT SEISMIC DATA A5-B

|              |              | km           |
|--------------|--------------|--------------|
| Schlumberger | MBWG13       | 470          |
| INP Regional | INP          | 470          |
| Brokered     | Other        | 119          |
|              | <b>TOTAL</b> | <b>1,059</b> |

# Zambezi

## 6 Areas

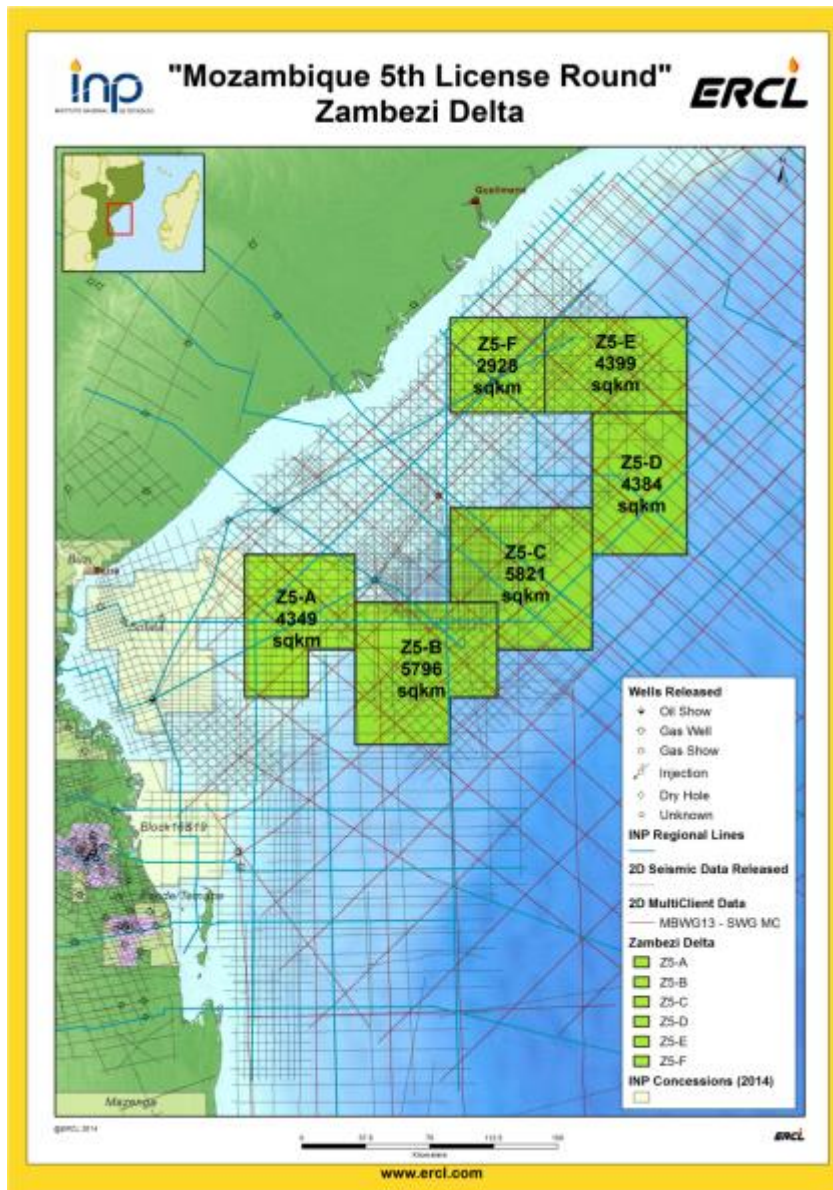
# 27,677 Km<sup>2</sup>



|      |                       |
|------|-----------------------|
| Z5-A | 4,349 Km <sup>2</sup> |
| Z5-B | 5,796 Km <sup>2</sup> |
| Z5-C | 5,821 Km <sup>2</sup> |
| Z5-D | 4,384 Km <sup>2</sup> |
| Z5-E | 4,399 Km <sup>2</sup> |
| Z5-F | 2,928 Km <sup>2</sup> |



# Open Area – Offshore Zambezi / Beira High



## Offshore Zambezi Area 6 Areas 27,677 Km2

### INP/ERCL

- Released Wells
- Released Seismic
- Released Reports
- MOZDA
- Zambezi Report

### Schlumberger

- New MC Data
- MC Broker Data

### Corelab

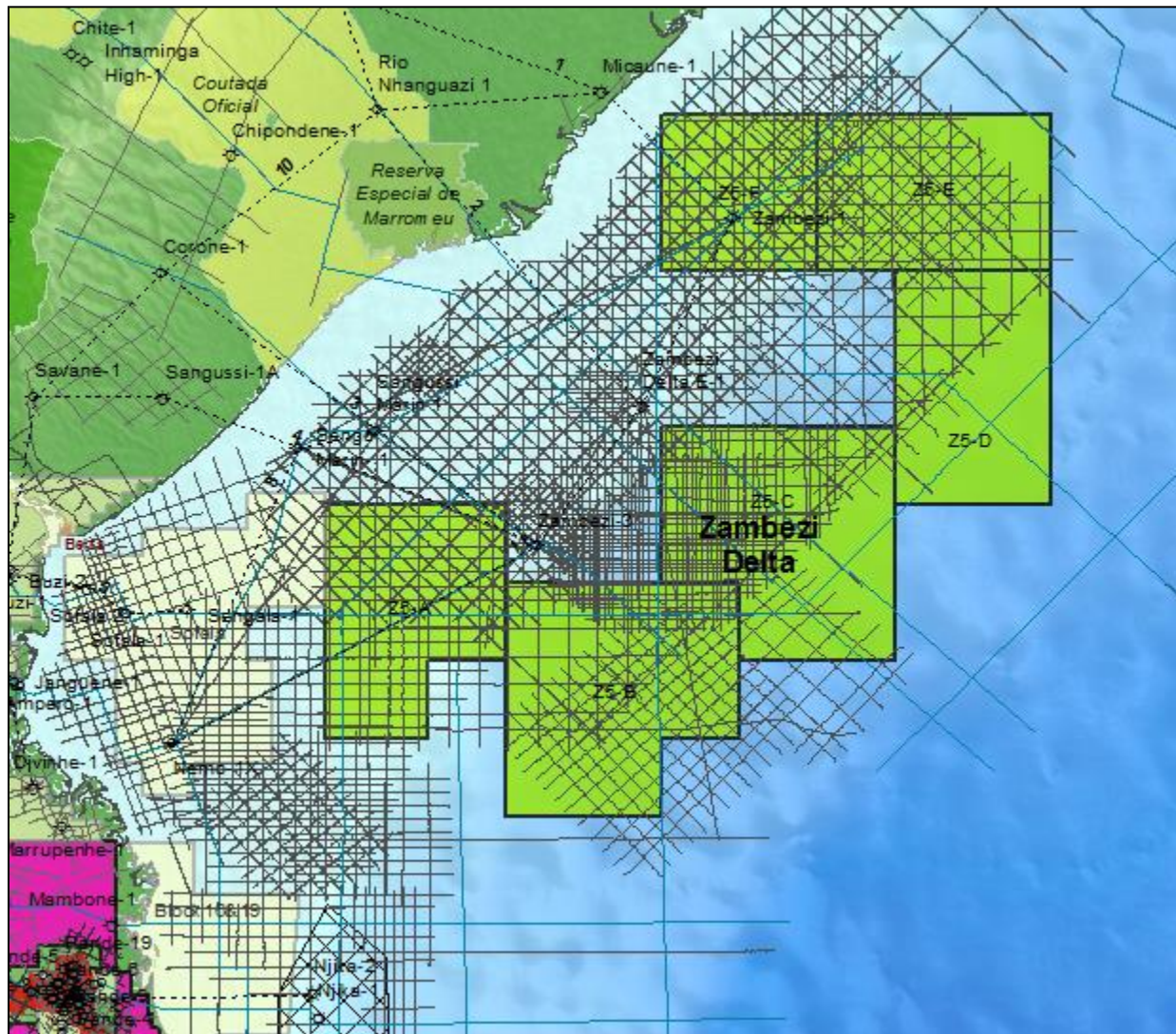
- Reservoir & Seals Study

# Offshore Key Wells

| Well name        | Year drilled | Operator          | Final Well Report | Bio Strat | Stratigraphy | Raw logs (LAS) | CPI Logs (Image) | CPI logs (LAS) | Reservoir & Pay Report | Included in IP <sup>TM</sup> Project database | ERCL Petrophysical Report |
|------------------|--------------|-------------------|-------------------|-----------|--------------|----------------|------------------|----------------|------------------------|-----------------------------------------------|---------------------------|
| Nemo-1X          | 1969         | Gulf Oil          |                   |           | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |
| Njika-1          | 2008         | Sasol Petroleum   | ✓                 | ✓         | ✓            | ✓              |                  |                |                        |                                               |                           |
| Njika-2          | 2009         | Sasol Petroleum   | ✓                 | ✓         | ✓            | ✓              |                  |                |                        |                                               |                           |
| Sangussi Marin-1 | 1971         | Aquitaine         | ✓                 | ✓         | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |
| Sengala-1        | 2000         | Sasol Petroleum   | ✓                 |           | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |
| Sengo Marin-1    | 1971         | Aquitaine         | ✓                 |           | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |
| Sofala-1         | 1970         | Gulf Oil          | ✓                 |           | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |
| Sofala-2         | 2000         | Sasol Petroleum   | ✓                 | ✓         | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |
| Zambezi-1        | 1970         | Hunt Petroleum    | ✓                 | ✓         | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |
| Zambezi-3        | 1971         | Hunt Petroleum    | ✓                 | ✓         | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |
| Z-DE-1           | 2007         | Petronas Carigali | ✓                 | ✓         | ✓            | ✓              | ✓                | ✓              | ✓                      | ✓                                             | ✓                         |

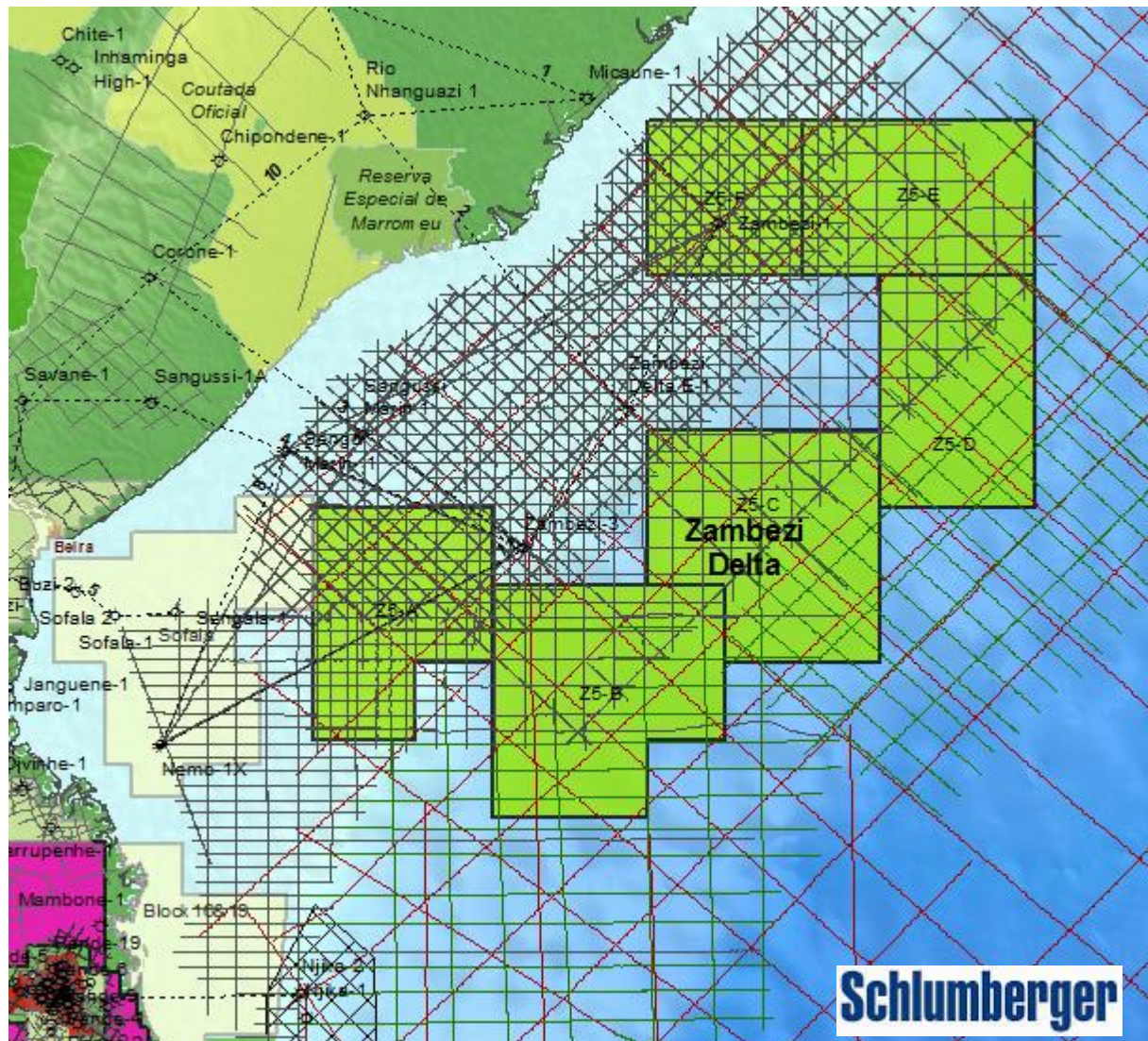
**11 Offshore key wells available to license through INP/ERCL**

# Released INP/ERCL Brokered Seismic



| Survey Name              | Year    |
|--------------------------|---------|
| GMR-81                   | 1981    |
| SM81                     | 1981    |
| GMC-81                   | 1982    |
| ENH-84                   | 1984    |
| ION-GTX                  | 1984    |
| JNOC                     | 1984    |
| BP-85                    | 1985    |
| ENH-85                   | 1985    |
| NTMOZ                    | 1987    |
| AMM10_98                 | 1998    |
| AMS-98                   | 1998    |
| LRP-98                   | 1998    |
| BP-98                    | 1999    |
| MOZ-00                   | 2000    |
| SZD-03                   | 2003    |
| Block 16/19-3D (in part) | 2007    |
| SPS 2008 (in part)       | 2008    |
| MOZ-08                   | 2008    |
| MP 2008 Sofala (in part) | 2008    |
| STE1D                    | 2008    |
| STK (in part)            | 2010    |
| INP Regional             | Various |

# Schlumberger – MC and Brokered 2D Seismic



| Survey Name | Year |
|-------------|------|
| GMR-81      | 1981 |
| SM81        | 1981 |
| GMC-81      | 1982 |
| BP-98       | 1998 |
| MBWG98      | 1998 |
| MBWG99      | 1999 |
| MBWG00      | 2000 |
| MBWG13      | 2013 |

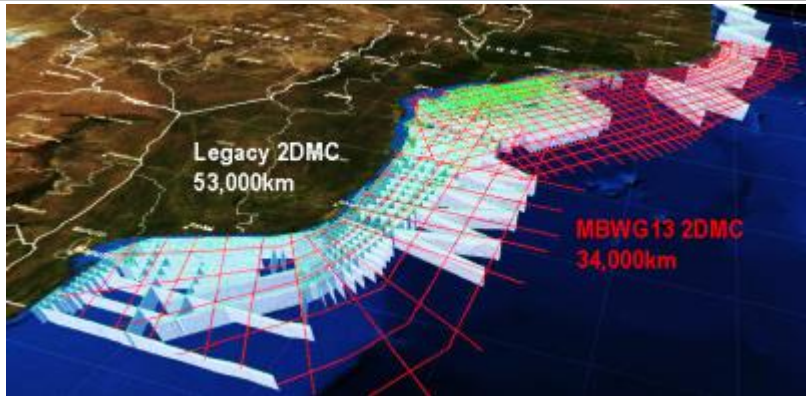
# Zambezi - Schlumberger Multiclient - MBWG13

Well-imaged delta clinoforms

Pinchouts against basement highs

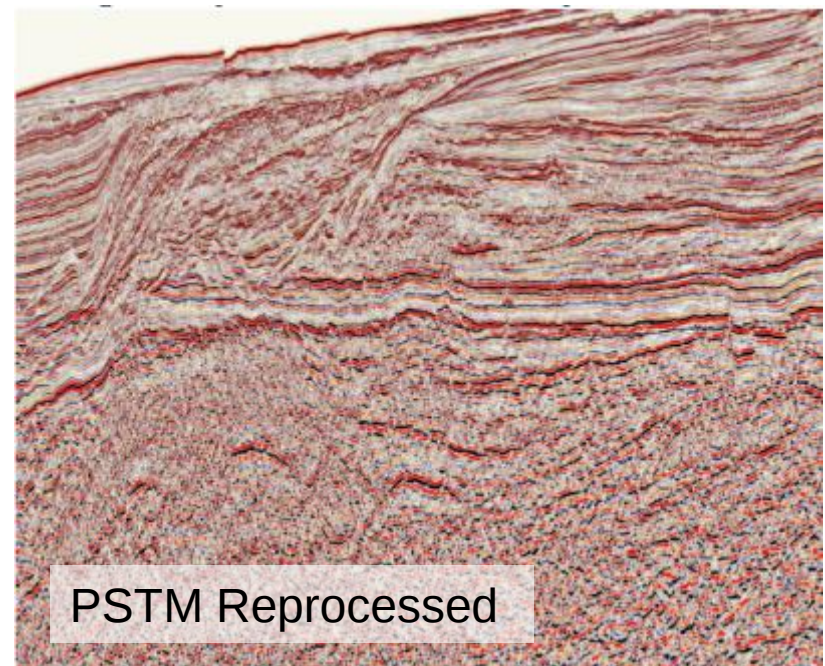
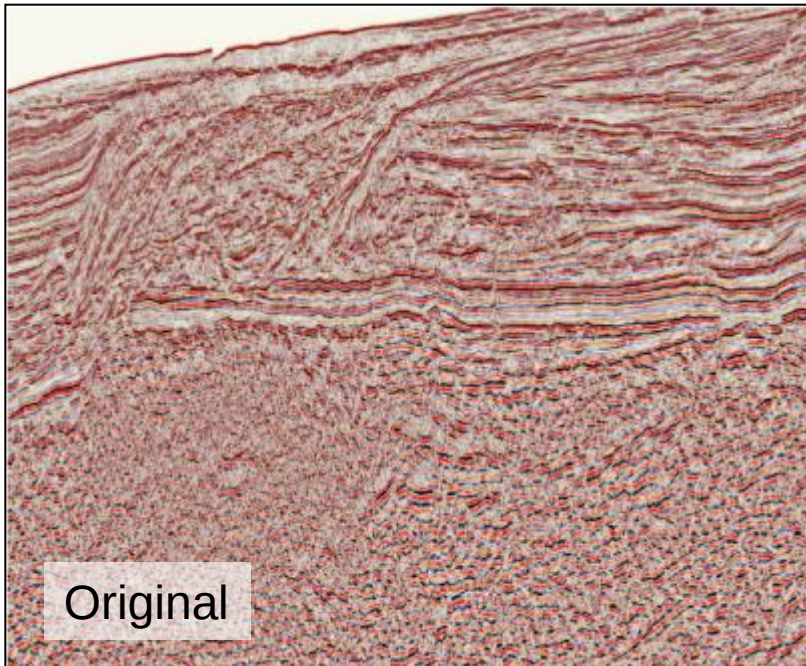
Syn-rift sediment fills

# Reprocessing Legacy Data



Schlumberger reprocessing

- Legacy WG MC Data



# Zambezi Z5-A

4,349 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

|          |               |              |
|----------|---------------|--------------|
| Period 1 | 2D Seismic    | 0 Km         |
| Period 1 | 3D Seismic    | 1,000 Sq. Km |
| Period 1 | Well          | 1            |
| Period 1 | Other Studies | 5 M\$        |
| Period 2 | Well          | 1            |
| Period 2 | Other Studies | 10 M\$       |
| Period 3 | Well          | 1            |
| Period 3 | Other Studies | 10 M\$       |

## CURRENT SEISMIC DATA Z5-A

|              |              |              |
|--------------|--------------|--------------|
|              |              | km           |
| Schlumberger | MBWG13       | 268          |
| INP Regional | INP          | 1,077        |
| Brokered     | Other        | 2,985        |
|              | <b>TOTAL</b> | <b>4,330</b> |

# Zambezi

# Z5-B

# 5,796 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

|          |               |              |  |
|----------|---------------|--------------|--|
| Period 1 | 2D Seismic    | 0 Km         |  |
| Period 1 | 3D Seismic    | 2,000 Sq. Km |  |
| Period 1 | Well          | 1            |  |
| Period 1 | Other Studies | 5 M\$        |  |
| Period 2 | Well          | 1            |  |
| Period 2 | Other Studies | 10 M\$       |  |
| Period 3 | Well          | 1            |  |
| Period 3 | Other Studies | 10 M\$       |  |

## CURRENT SEISMIC DATA Z5-B

|              |        |       |    |
|--------------|--------|-------|----|
| WesternGeco  | MBWG13 | 559   | km |
| INP Regional | INP    | 780   |    |
| Brokered     | Other  | 3,896 |    |
| TOTAL        |        | 5,235 |    |

# Zambezi

# Z5-C

# 5,821 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

| Period 1 | 2D Seismic    | 0     | Km     |
|----------|---------------|-------|--------|
| Period 1 | 3D Seismic    | 2,000 | Sq. Km |
| Period 1 | Well          | 1     |        |
| Period 1 | Other Studies | 5     | M\$    |
| Period 2 | Well          | 1     |        |
| Period 2 | Other Studies | 10    | M\$    |
| Period 3 | Well          | 1     |        |
| Period 3 | Other Studies | 10    | M\$    |

## CURRENT SEISMIC DATA Z5-C

|              |        | km    |  |
|--------------|--------|-------|--|
| WesternGeco  | MBWG13 | 379   |  |
| INP Regional | INP    | 1,237 |  |
| Brokered     | Other  | 3,757 |  |
|              | TOTAL  | 5,373 |  |

# Zambezi

# Z5-D

# 4,384 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

| Period 1 | 2D Seismic    | 0     | Km     |
|----------|---------------|-------|--------|
| Period 1 | 3D Seismic    | 1,500 | Sq. Km |
| Period 1 | Well          | 0     |        |
| Period 1 | Other Studies | 3     | M\$    |
| Period 2 | Well          | 1     |        |
| Period 2 | Other Studies | 10    | M\$    |
| Period 3 | Well          | 1     |        |
| Period 3 | Other Studies | 10    | M\$    |

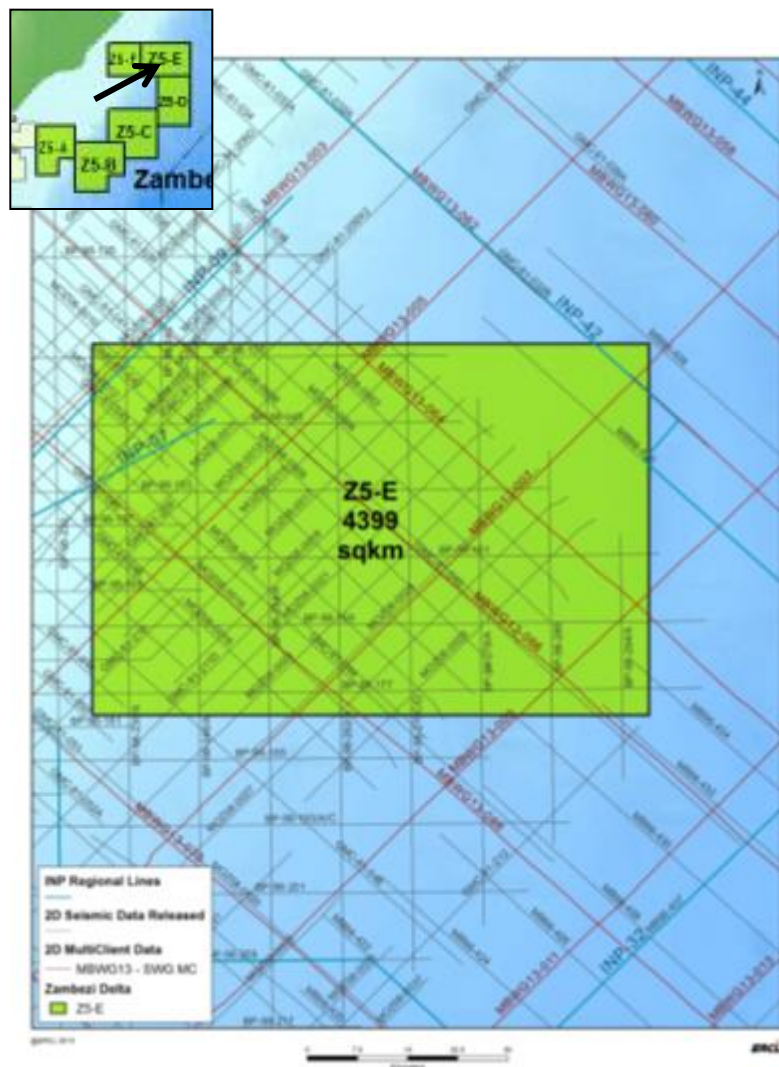
## CURRENT SEISMIC DATA Z5-D

|              |        | km    |  |
|--------------|--------|-------|--|
| WesternGeco  | MBWG13 | 319   |  |
| INP Regional | INP    | 926   |  |
| Brokered     | Other  | 1,108 |  |
|              | TOTAL  | 2,353 |  |

# Zambezi

# Z5-E

# 4,399 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

|          |               |              |
|----------|---------------|--------------|
| Period 1 | 2D Seismic    | 0 Km         |
| Period 1 | 3D Seismic    | 1,500 Sq. Km |
| Period 1 | Well          | 1            |
| Period 1 | Other Studies | 5 M\$        |
| Period 2 | Well          | 1            |
| Period 2 | Other Studies | 10 M\$       |
| Period 3 | Well          | 1            |
| Period 3 | Other Studies | 10 M\$       |

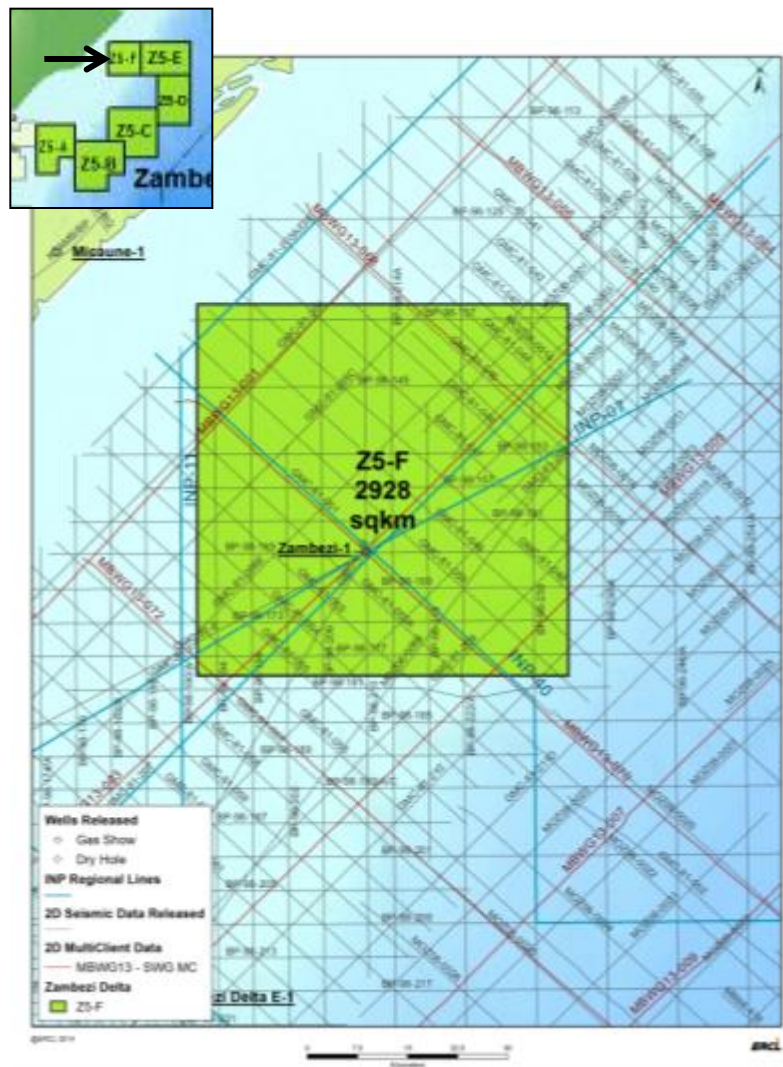
## CURRENT SEISMIC DATA Z5-E

|              |        |       |
|--------------|--------|-------|
| WesternGeco  | MBWG13 | 371   |
| INP Regional | INP    | 653   |
| Brokered     | Other  | 2,495 |
| TOTAL        |        | 3,519 |

# Zambezi

# Z5-F

# 2,928 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

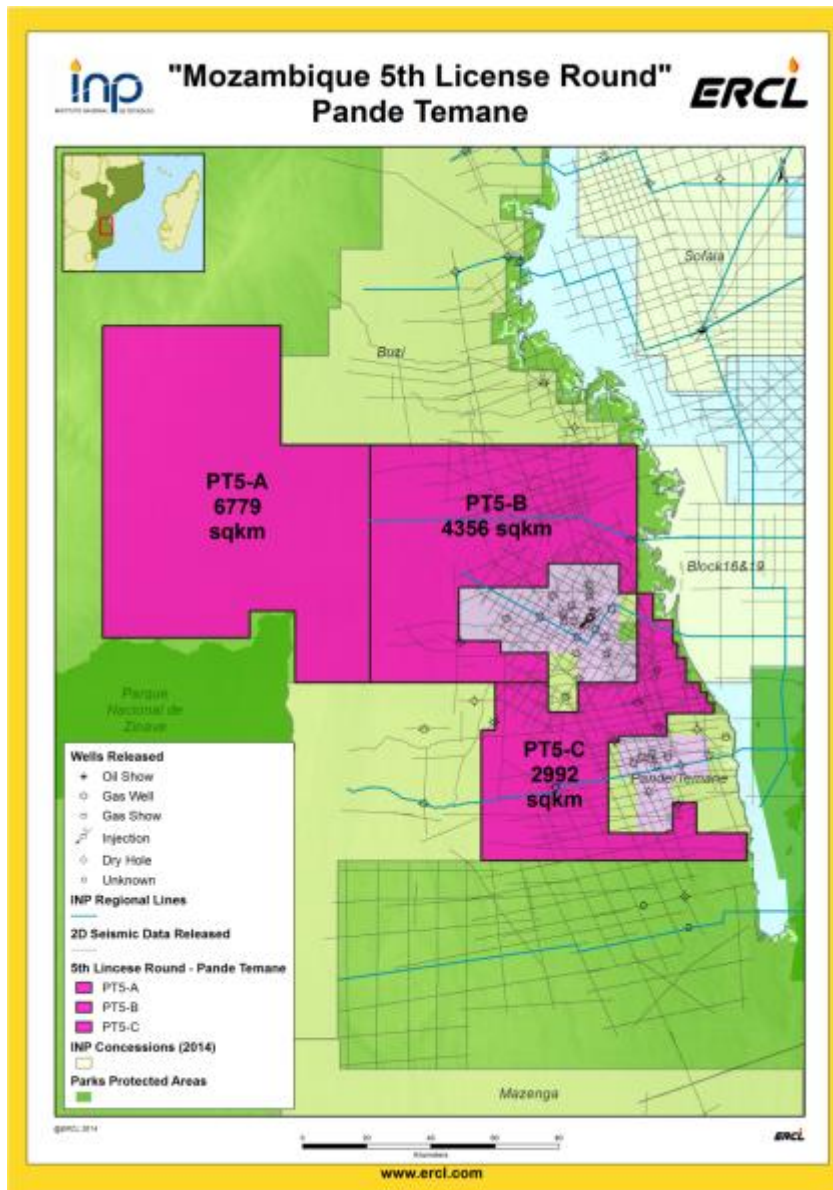
|          |               |     |        |
|----------|---------------|-----|--------|
| Period 1 | 2D Seismic    | 0   | Km     |
| Period 1 | 3D Seismic    | 750 | Sq. Km |
| Period 1 | Well          | 1   |        |
| Period 1 | Other Studies | 3   | M\$    |
| Period 2 | Well          | 1   |        |
| Period 2 | Other Studies | 5   | M\$    |
| Period 3 | Well          | 1   |        |
| Period 3 | Other Studies | 5   | M\$    |

## CURRENT SEISMIC DATA Z5-F

|              |        |       |  |
|--------------|--------|-------|--|
|              |        | km    |  |
| WesternGeco  | MBWG13 | 202   |  |
| INP Regional | INP    | 1,625 |  |
| Brokered     | Other  | 2,110 |  |
|              | TOTAL  | 3,937 |  |

# Pande Temane Area

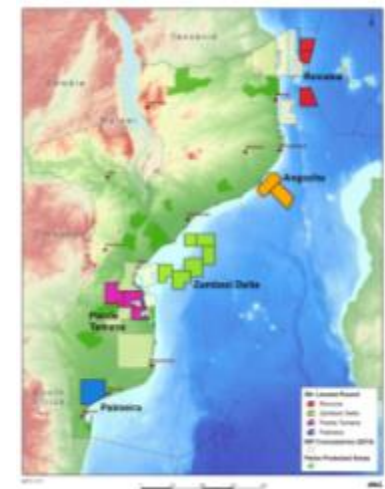
3 Areas 14,183 Km<sup>2</sup>



PT5-A 6,779 Km<sup>2</sup>

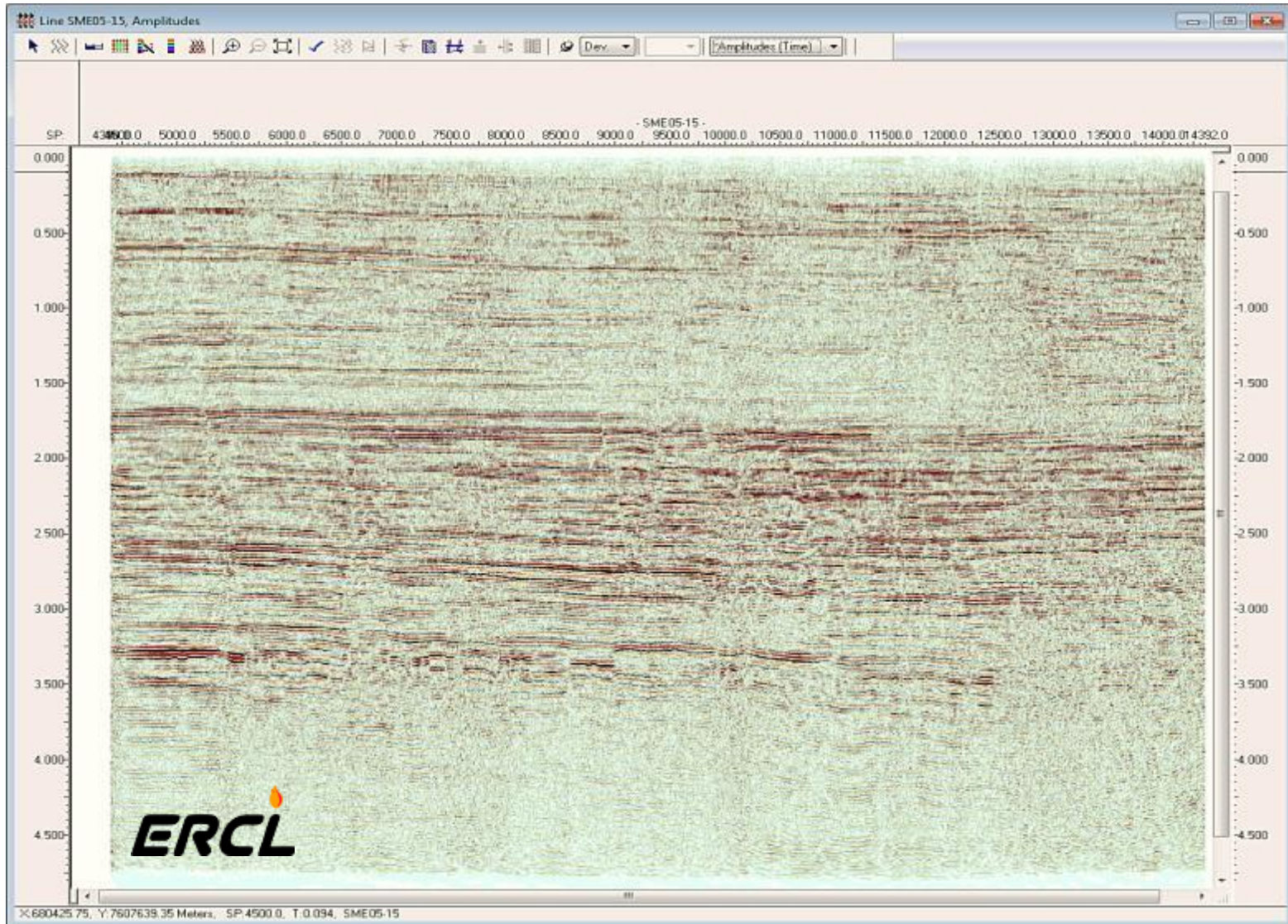
PT5-B 4,356 Km<sup>2</sup>

PT5-C 2,992 Km<sup>2</sup>



# Pande Temane Area

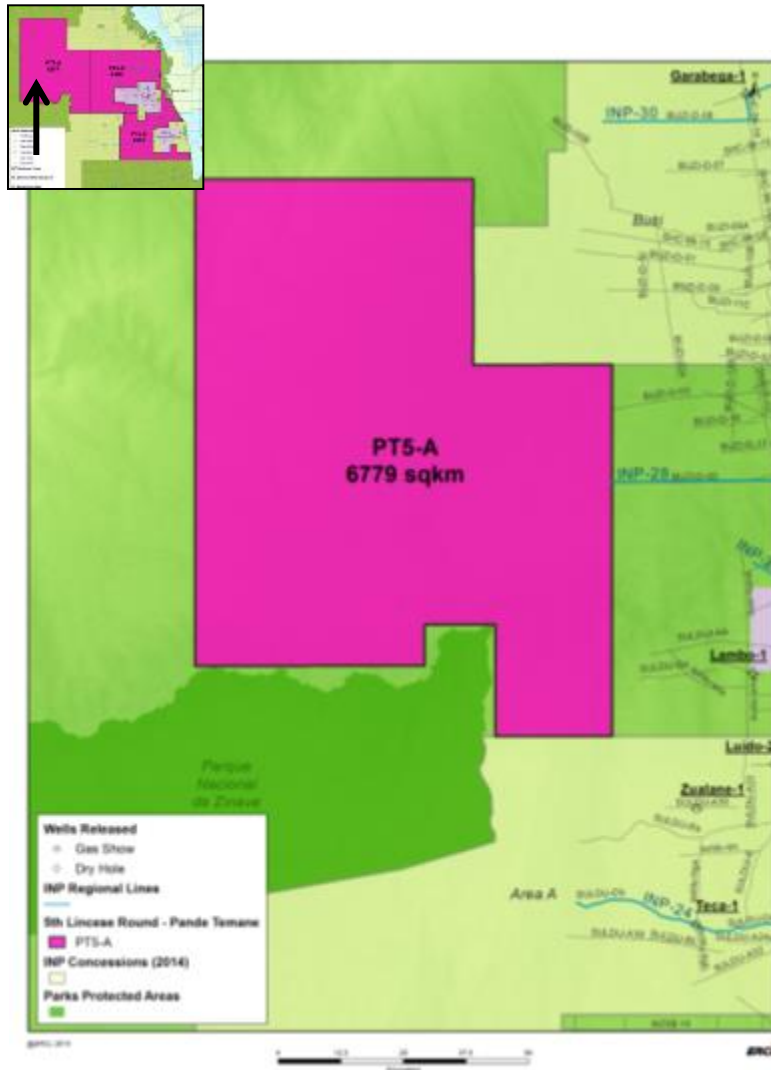
# Released Seismic



# Pande/Temane

# PT-A

# 6,779 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

| Period 1 | 2D Seismic    | 1,600 | Km     |
|----------|---------------|-------|--------|
| Period 1 | 3D Seismic    | 0     | Sq. Km |
| Period 1 | Well          | 0     |        |
| Period 1 | Other Studies | 5     | M\$    |
| Period 2 | Well          | 1     |        |
| Period 2 | Other Studies | 5     | M\$    |
| Period 3 | Well          | 1     |        |
| Period 3 | Other Studies | 5     | M\$    |

NOTE: The 2D seismic minimum program could be offset against a Full Tensor Gravity (FTG) program or a 3D seismic commitment.

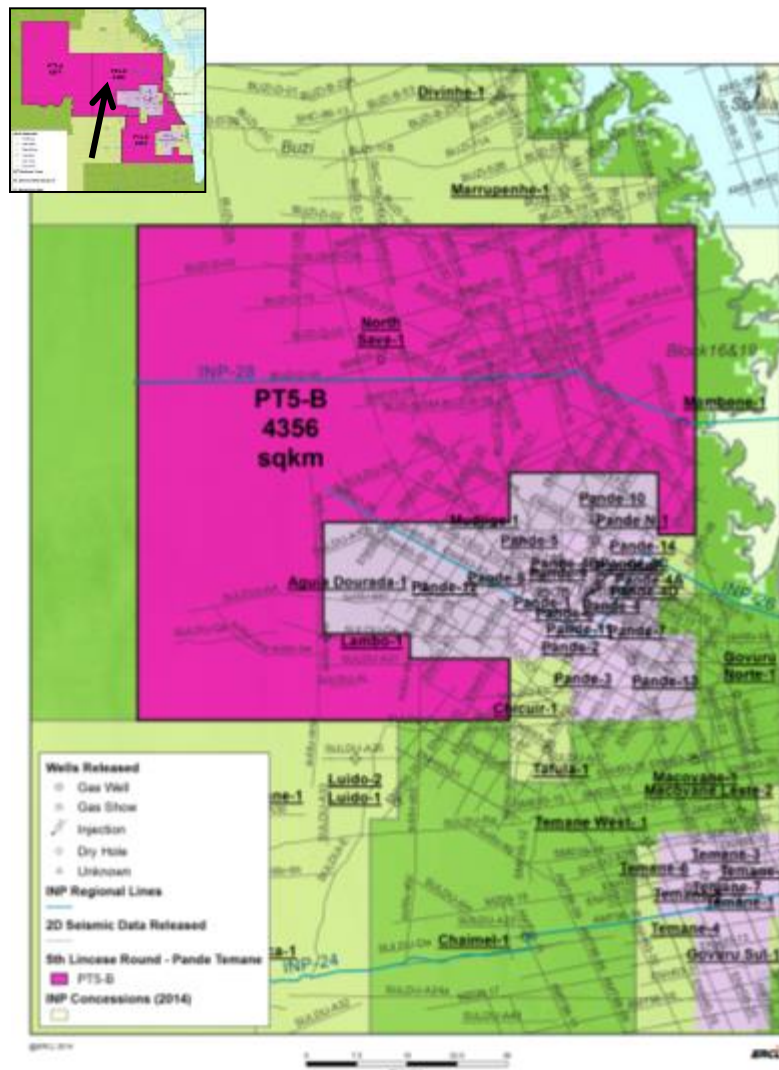
## CURRENT SEISMIC DATA PT- A

|              |              | km       |
|--------------|--------------|----------|
| INP Regional | INP          | 0        |
| Brokered     | Other        | 0        |
|              | <b>TOTAL</b> | <b>0</b> |

# Pande/Temane

# PT-B

# 4,356 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

| Period 1 | 2D Seismic    | 1,600 | Km     |
|----------|---------------|-------|--------|
| Period 1 | 3D Seismic    | 0     | Sq. Km |
| Period 1 | Well          | 0     |        |
| Period 1 | Other Studies | 5     | M\$    |
| Period 2 | Well          | 1     |        |
| Period 2 | Other Studies | 5     | M\$    |
| Period 3 | Well          | 1     |        |
| Period 3 | Other Studies | 5     | M\$    |

NOTE: The 2D seismic minimum program could be offset against a 3D seismic commitment.

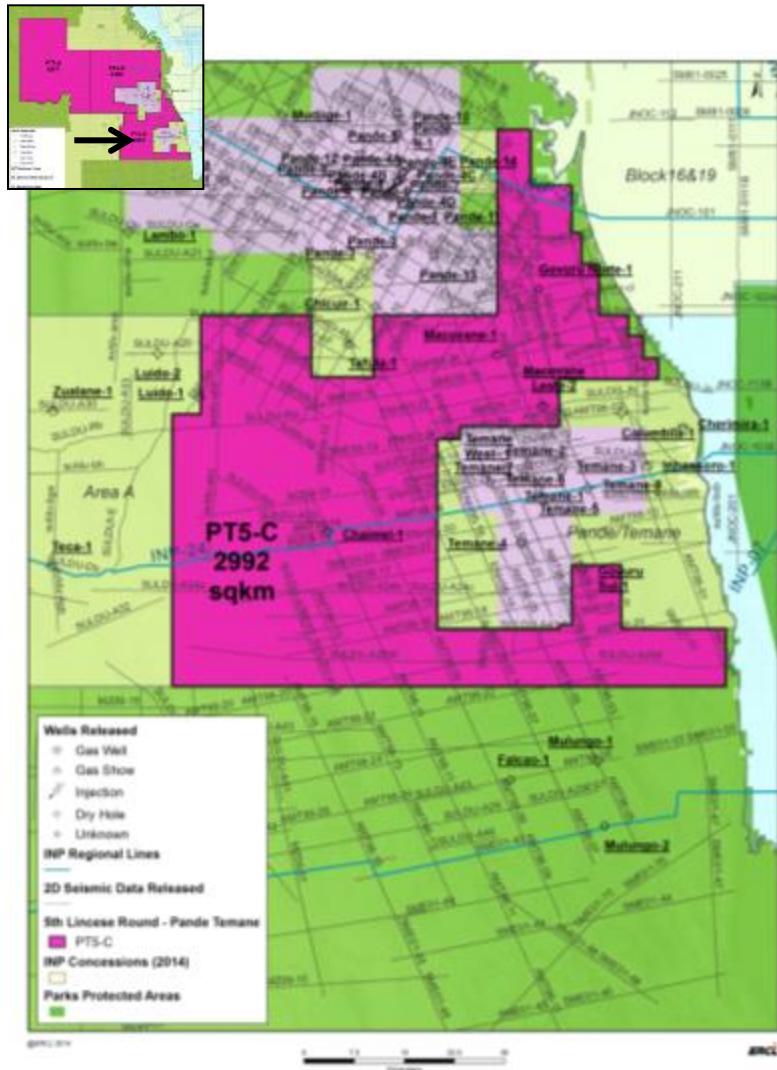
## CURRENT SEISMIC DATA PT- B

|              |       | km    |  |
|--------------|-------|-------|--|
| INP Regional | INP   | 200   |  |
| Brokered     | Other | 1,441 |  |
|              | TOTAL | 1,641 |  |

# Pande/Temane

# PT-C

# 2,992 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

|          |               |          |  |
|----------|---------------|----------|--|
| Period 1 | 2D Seismic    | 1,600 Km |  |
| Period 1 | 3D Seismic    | 0 Sq. Km |  |
| Period 1 | Well          | 1        |  |
| Period 1 | Other Studies | 5 M\$    |  |
| Period 2 | Well          | 1        |  |
| Period 2 | Other Studies | 5 M\$    |  |
| Period 3 | Well          | 1        |  |
| Period 3 | Other Studies | 5 M\$    |  |

NOTE: The 2D seismic minimum program could be offset against a 3D seismic commitment.

## CURRENT SEISMIC DATA PT-C

|              |       |       |    |
|--------------|-------|-------|----|
| INP Regional | INP   | 200   | km |
| Brokered     | Other | 1,853 |    |
|              | TOTAL | 2,053 |    |

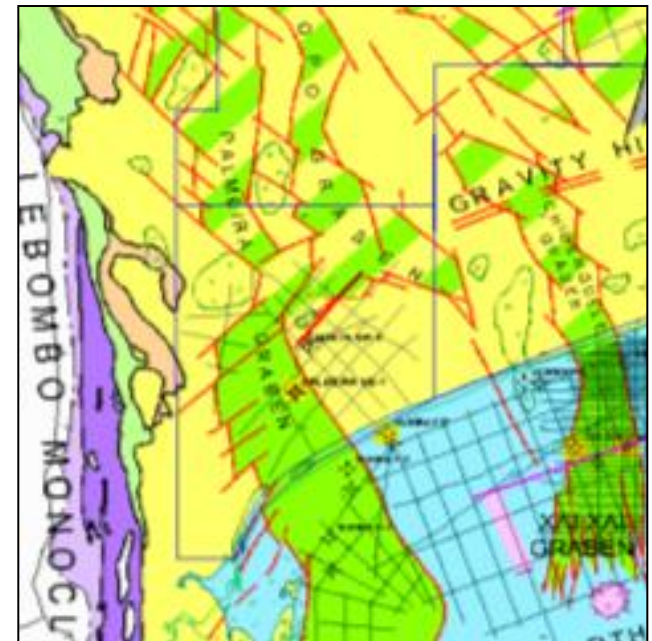
# Palmeira

## 1 Block

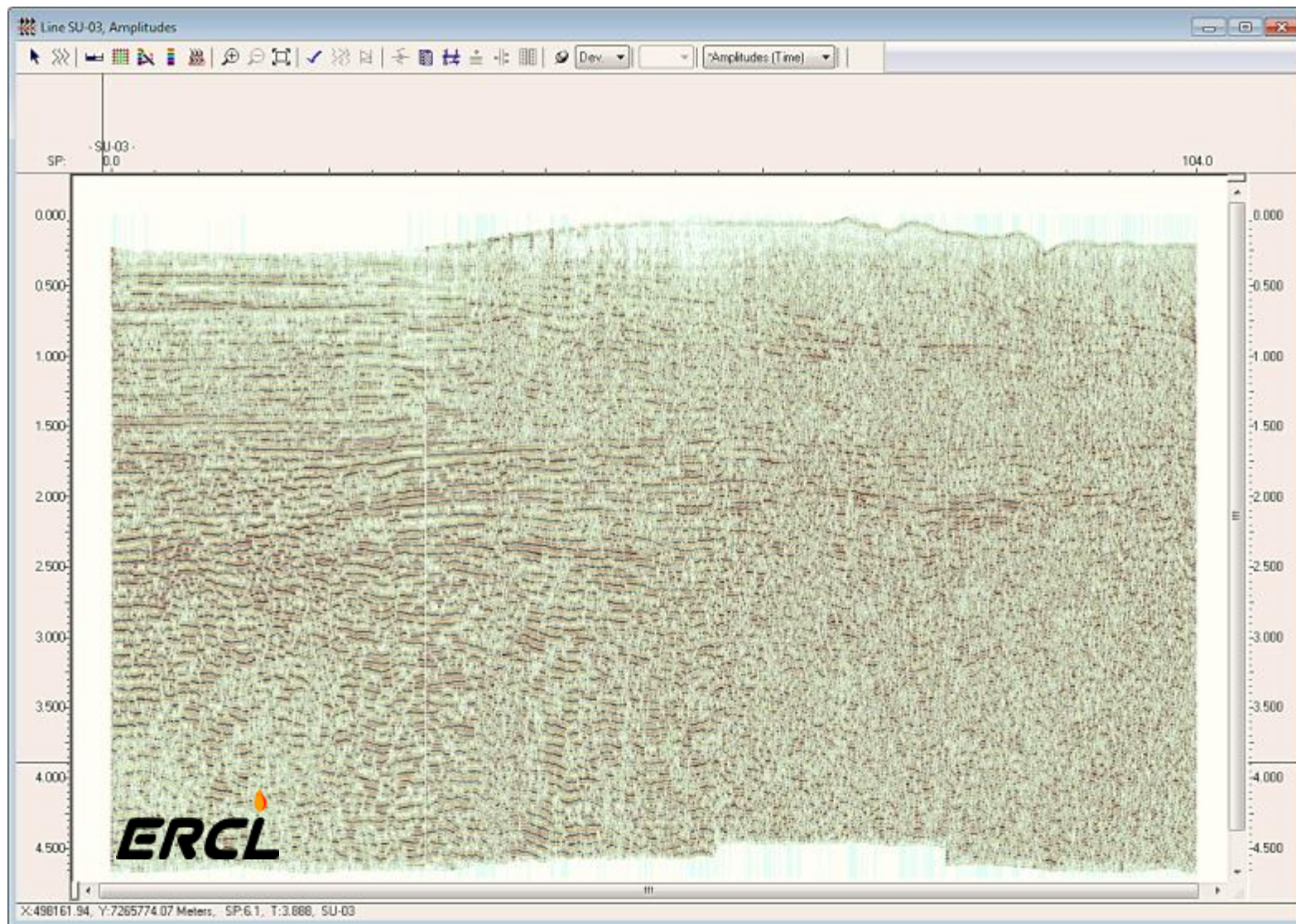
## 9,988 Km<sup>2</sup>



P5-A = 9,982 Km<sup>2</sup>



# Palmera Example Seismic



# Palmeira

P5A 9,998 Km<sup>2</sup>



## MINIMUM WORK PROGRAM

|          |               |          |  |
|----------|---------------|----------|--|
| Period 1 | 2D Seismic    | 1,600 Km |  |
| Period 1 | 3D Seismic    | 0 Sq. Km |  |
| Period 1 | Well          | 0        |  |
| Period 1 | Other Studies | 8 M\$    |  |
| Period 2 | Well          | 1        |  |
| Period 2 | Other Studies | 5 M\$    |  |
| Period 3 | Well          | 1        |  |
| Period 3 | Other Studies | 5 M\$    |  |

NOTE: The 2D seismic minimum program could be offset against a Full Tensor Gravity (FTG) program or a 3D seismic commitment.

## CURRENT SEISMIC DATA P5-A

|              |       | km  |  |
|--------------|-------|-----|--|
| INP Regional | INP   | 100 |  |
| Brokered     | Other | 852 |  |
|              | TOTAL | 952 |  |

# Application Guidelines

# Application Guidelines



REPUBLIC OF MOZAMBIQUE  
MINISTRY OF MINERAL RESOURCES

## MOZAMBIQUE 5<sup>TH</sup> LICENSING ROUND

### APPLICATION GUIDELINES & MINIMUM WORK PROGRAMS

Round closes Tuesday, 20<sup>th</sup> January 2015

|



**INSTITUTO NACIONAL DE PETRÓLEO**  
Av. Fernão de Magalhães n° 34 1° Andar  
CP n° 4724  
Maputo – Mozambique

1. INTRODUCTION
2. LEGAL & FISCAL DOCUMENTS
3. APPLICATION DOCUMENTS
4. SUBMITTING AN APPLICATION
5. MINIMUM WORK PROGRAMS
6. BID EVALUATION CRITERIA
7. GEOTECHNICAL DATA SUMMARY
8. CONTACT DETAILS

## 2. Legal & Fiscal Documents

2.1 Schedule 1 - Petroleum Law

2.2 Schedule 2 - Petroleum Operation Regulations

2.3 Schedule 3 - Model EPC

2.4 Schedule 4 - Areas in Mozambique 5<sup>th</sup> Licensing Round

## 2.1 Petroleum Law

The Mozambique Petroleum sector is currently regulated by the Petroleum Law No 21/2104 of 18<sup>th</sup> August. The law establishes the regime for the granting of rights for the conduct of Petroleum Operations in the Republic of Mozambique. The scope of the law excludes the refining of Petroleum and its industrial utilization.

### **Ownership of Petroleum Resources**

Petroleum resources in situ as natural resources in the soil and the subsoil of the land territory of Mozambique, in the seabed of its the interior waters, territorial sea and of the Exclusive Economic Zone or its continental shelf are the property of the State.

### **Participation of the State**

The State reserves itself the right to participate in Petroleum Operations. The participation of the State may occur during any phase of Petroleum Operations or during the construction and operation of a Oil Pipelines and Gas Pipelines or other Facilities in accordance with the terms and conditions to be established in a Concession Contract and approved Development Plans.

## 2.2 Petroleum Operation Regulations

The Petroleum Operations Regulations are currently being updated to further outline the conditions for the conduct of Petroleum Operations in Mozambique. Petroleum Operations may only be conducted in accordance with:

### **Reconnaissance Concession Contract**

Allows the holder the right to conduct preliminary work and assessment operations in the area subject to the Concession Contract. Is executed on a basis of exclusivity for a maximum two-year period and permits the drilling of wells to a depth of 100 meters below the surface or the bottom of the sea.

### **Exploration and Production Concession Contract**

An Exploration and Production Concession Contract gives an exclusive right to conduct Petroleum Exploration and Production activities as well as the non-exclusive right to operate petroleum pipelines.

### **Facilities Concession Contract**

A Facility Concession Contract grants Concessionaires a right to conduct Petroleum Operations related to the construction and operation of facilities not encompassed by a Development Plan pursuant to an Exploration and Production Concession Contract, such as multi use central processing Facility serving several EPCC Areas or a multi-user LNG plant serving several EPCC Areas.

### **Petroleum Pipeline Concession Contract**

A Petroleum Pipeline Concession Contract grants the right to construct and operate an Oil Pipeline or a Gas Pipeline for the purpose of transporting Crude Oil or Natural Gas in cases that such are not covered by an Exploration and Production Concession Contract.

## 2.3 Model EPCC

### EXPLORATION AND PRODUCTION CONCESSION CONTRACT”.

The revised Model EPCC will be available to download from the website ([www.inp-mz.com](http://www.inp-mz.com))

The EPCC granted to the successful applicants will be based on this model. The awarded EPCCs will be made public consistent with Petroleum Law 2014 requirements.

Applicants should take due notice that the EPCC is based on an administrative law based governmental decision in which a specific number of fiscal elements have been agreed based on negotiation prior to the final award.

It is provided in Microsoft Word format for companies to complete.

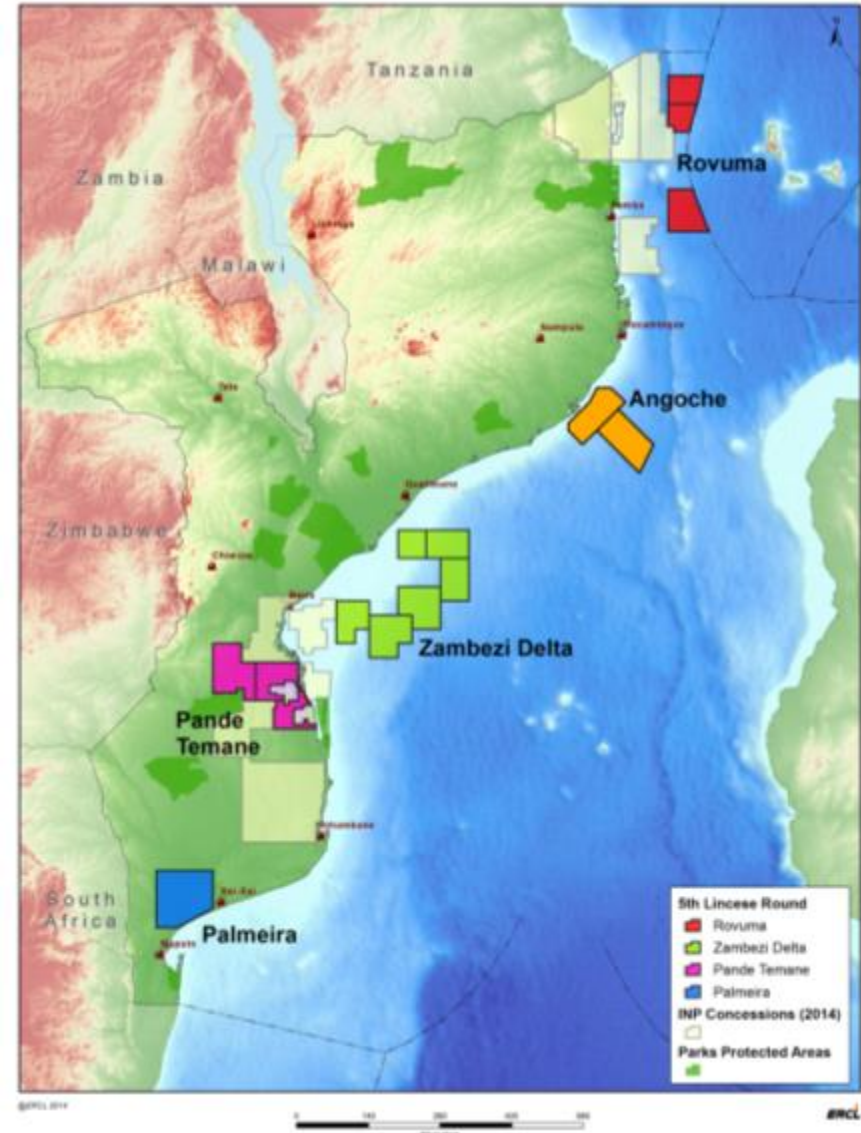
## 2.4 Areas in Mozambique 5<sup>th</sup> Licensing Round

Schedule IV provides details of the blocks on offer in the 5<sup>th</sup> Licensing Round.

- Four Onshore Areas
- Two Offshore Areas with water depths broadly defined as less than 600m
- Nine Offshore Deep Water Areas, with water depths in excess of 6000m.

Areas that adjoin each other may be linked and combined in to a single application.

Applicants should ensure that the obligatory work program represents a work program that evaluates all of the defined area.



### 3. APPLICATION DOCUMENTS

- 3.1 Appendix A - Applicant Details and Financial Information
- 3.2 Appendix B - Technical Application Summary
- 3.3 Appendix C - Financial Proposal
- 3.4 Appendix D - Health Safety Environment

## 3.1 Applicant Details and Financial Information

### APPENDIX A

Appendix A contains financial information about the applicant and is required to support applications for a Reconnaissance Concession Contract, an Exploration and Production Concession Contract or a Pipeline Concession Contract.

Where there are two or more companies submitting a combined or joint application, the Government require the Appendix A completed by each applicant separately.

Companies are required to confirm that they are not in default of any obligations to the State.

## 3.2 Technical Application Summary

### APPENDIX B

The technical submission shall contain the information requested on the following pages for each of the areas applied for.

Attached to the technical submission the applicant is requested to present brief and relevant documentation for each area of G&G studies and analyses focusing on aspects that are considered critical for an evaluation of the prospectivity of the area, such as:

- a brief and focused petroleum geological analysis, describing the prospectivity in the area applied for, critical factors, etc.
- a brief description of the seismic interpretation, well ties, etc., including attached interpreted seismic sections
- time and depth structure maps for prospective horizons, showing all identified prospects and leads
- brief description of the prospect evaluation
- description of the proposed obligatory work programme and exploration strategy

The technical submission should also be provided on a separate USB or CDROM which should have adequate resolution of all the figures in order to show relevant details.

# Technical Application Summary Sheets



## B2. INDIVIDUAL PROSPECT / LEAD EVALUATION SHEETS

As much information as possible should be filled in (leads are not expected to have a complete volume and parameter data set). The map with prospect/lead outline must have coordinates.

|                                                                   |                              |                                                 |                                  |                                      |                                  |
|-------------------------------------------------------------------|------------------------------|-------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|
| Prospect / Lead name                                              |                              | Reference to seismic line(s)/ seismic coverage: |                                  |                                      |                                  |
| Prospect / Lead                                                   | Structural element           | Reported by (company & report reference / date) |                                  | Water depth (m)                      |                                  |
| Play                                                              | Area & Block(s)              |                                                 |                                  | Ground level elev (m)                |                                  |
| <b>CALCULATED HYDROCARBON VOLUMES</b>                             |                              |                                                 |                                  |                                      |                                  |
| Gas / Oil case                                                    | ORIGINALLY IN PLACE          |                                                 |                                  | RECOVERABLE                          |                                  |
|                                                                   | Low                          | Base                                            | High                             | Low                                  | High                             |
| Gas Bcf                                                           |                              |                                                 |                                  |                                      |                                  |
| Condensate / Oil MMBbl                                            |                              |                                                 |                                  |                                      |                                  |
| Comments                                                          |                              |                                                 |                                  |                                      |                                  |
| Calculate Volumes                                                 |                              |                                                 |                                  |                                      |                                  |
| <b>PROSPECT RISK ASSESSMENT</b>                                   |                              |                                                 |                                  |                                      |                                  |
| Trap                                                              |                              | Reservoir                                       |                                  | Source                               |                                  |
| Probability of structure                                          | Probability of seal          | Presence of Target fm                           | Probability of Reservoir Quality | Probability of Source                | Probability of maturity / charge |
|                                                                   |                              |                                                 |                                  |                                      |                                  |
| Comments, Prospect Risk Assessment                                |                              | Geol. probability of success:                   |                                  |                                      |                                  |
| <b>TRAP TYPE, RESERVOIR ROCK, SOURCE ROCK, CAP ROCK (SEAL)</b>    |                              |                                                 |                                  |                                      |                                  |
| Type of trap (structural, stratigraphic, etc)                     |                              | Reservoir level (Chronostrat./age)              |                                  | Reservoir level (Lithostrat./fm)     |                                  |
|                                                                   |                              |                                                 |                                  |                                      |                                  |
| Source Rock (Chronostrat. /                                       | Source Rock (Lithostrat./fm) | Seal (Chronostratigraphy /age)                  |                                  | Seal (Lithostratigraphy / formation) |                                  |
|                                                                   |                              |                                                 |                                  |                                      |                                  |
| Comments:                                                         |                              |                                                 |                                  |                                      |                                  |
| <b>PARAMETRES USED IN VOLUME CALCULATIONS</b>                     |                              |                                                 |                                  |                                      |                                  |
|                                                                   | Low                          | Base case (most likely value)                   |                                  | High                                 |                                  |
| Depth to top of prospect (m) (below Ground level / sea level)     |                              |                                                 |                                  |                                      |                                  |
| Depth to base of prospect (m) (closing contour)                   |                              |                                                 |                                  |                                      |                                  |
| Milliseconds to top of prospect (ms)                              |                              |                                                 |                                  |                                      |                                  |
| Milliseconds to base of prospect (ms)                             |                              |                                                 |                                  |                                      |                                  |
| Area of closure (km <sup>2</sup> )                                |                              |                                                 |                                  |                                      |                                  |
| Gross rock volume (10 <sup>9</sup> m <sup>3</sup> )               |                              |                                                 |                                  |                                      |                                  |
| Hydrocarbon column in prospect (m)                                |                              |                                                 |                                  |                                      |                                  |
| Reservoir thickness (m)                                           |                              |                                                 |                                  |                                      |                                  |
| Net / Gross (N/G)                                                 |                              |                                                 |                                  |                                      |                                  |
| Porosity ( % )                                                    |                              |                                                 |                                  |                                      |                                  |
| Water Saturation (Sw)                                             |                              |                                                 |                                  |                                      |                                  |
| Formation Volume Factor (FVF)                                     | Bg                           |                                                 |                                  |                                      |                                  |
|                                                                   | Bo                           |                                                 |                                  |                                      |                                  |
| Recovery factor                                                   |                              |                                                 |                                  |                                      |                                  |
| Gas Oil Ratio (GOR), free gas (Sm <sup>3</sup> /Sm <sup>3</sup> ) |                              |                                                 |                                  |                                      |                                  |
| GOR, oil (Sm <sup>3</sup> /Sm <sup>3</sup> )                      |                              |                                                 |                                  |                                      |                                  |



## Summary of proposed of work program:

(Please complete the appropriate boxes and provide expected cost.)

|                           |             |                         |                         |                   |
|---------------------------|-------------|-------------------------|-------------------------|-------------------|
| First Exploration Period: | Other:      | 2D Seismic Acquisition: | 3D Seismic Acquisition: | Drill Expl. Well: |
|                           | Size: _____ | Size: _____             | Size: _____             | Depth: _____      |
| Years                     | USD: _____  | USD: _____              | USD: _____              | Target _____      |
|                           |             |                         |                         | USD: _____        |
| Second Extension Period:  | Other:      | 2D Seismic Acquisition: | 3D Seismic Acquisition: | Drill Expl. Well: |
|                           | Size: _____ | Size: _____             | Size: _____             | Depth: _____      |
| Years                     | USD: _____  | USD: _____              | USD: _____              | Target _____      |
|                           |             |                         |                         | USD: _____        |
| Third Extension Period:   | Other:      | 2D Seismic Acquisition: | 3D Seismic Acquisition: | Drill Expl. Well: |
|                           | Size: _____ | Size: _____             | Size: _____             | Depth: _____      |
| Years                     | USD: _____  | USD: _____              | USD: _____              | Target _____      |
|                           |             |                         |                         | USD: _____        |

## Re-processing and re-interpretation of existing geotechnical data (seismic / well)

|                         | Line km<br>Within the area applied for | Line Km<br>Within Region |
|-------------------------|----------------------------------------|--------------------------|
| Reprocessing            |                                        |                          |
| New Interpretation      |                                        |                          |
| Other (special studies) |                                        |                          |

## 3.3 Financial Proposal

### APPENDIX C

The proposal of the applicant for the obligatory work commitment and minimum expenditure amounts to be incorporated in the standard Bank Guarantee in respect of the Exploration Area (s) specified in the application must be stated.

Definite proposal with respect to all negotiable items as contained in the Model Exploration and Production Concession Contract must be stated, including bonus payments, training, institutional support that may be applicable.

# Financial Proposal – Appendix C

## Key Points

- Training
- Institutional Support
- Social Support
- ENH carried Interest
- Cost Petroleum
- R Factor Table  
(now fixed by Law)
- Production Bonus
- Expenditure Commitments  
(by Period)

| Items                                                     |                                                                                                         |             | US \$ | %   |
|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-------------|-------|-----|
| Training                                                  |                                                                                                         |             |       |     |
| Institutional Support                                     |                                                                                                         |             |       |     |
| Social Support                                            |                                                                                                         |             |       |     |
|                                                           |                                                                                                         |             |       |     |
|                                                           |                                                                                                         |             |       |     |
| ENH carried Interest (minimum 10%)                        |                                                                                                         |             |       |     |
| Cost Petroleum                                            |                                                                                                         |             |       | 60% |
|                                                           |                                                                                                         |             |       |     |
| Production Share<br>R-Factor:<br>Concessionaires<br>Share | R<1                                                                                                     | Minimum 85% |       |     |
|                                                           | 1≤ R < 1.5                                                                                              | Minimum 75% |       |     |
|                                                           | 1.5 ≤ R < 2.0                                                                                           | Minimum 65% |       |     |
|                                                           | 2.0 ≤ R < 2.5                                                                                           | Minimum 50% |       |     |
|                                                           | R ≤ 2.5                                                                                                 | Minimum 40% |       |     |
| Production Bonus<br>payable in US Dollar                  | At the commence of initial commercial production:                                                       |             |       |     |
|                                                           | When Production from EPCC Area first reach _____ BOE/day average for a month:                           |             |       |     |
|                                                           | When Production from EPCC Area first reaches each further tranche of _____ BOE/day average for a month: |             |       |     |
|                                                           |                                                                                                         |             |       |     |
| Total Expenditure<br>Commitment<br>(US \$ million)        | First Exploration Period                                                                                |             |       |     |
|                                                           | Second Exploration Period                                                                               |             |       |     |
|                                                           | Third Exploration Period                                                                                |             |       |     |
|                                                           | Total EPCC Expenditure                                                                                  |             |       |     |

## 3.4 Health Safety Environment

### APPENDIX D

An applicant should submit details of the Health, Safety and Environment protection company policy and record of the same for the last 3 years.

Note:

*Legal requirement and INP objectives are to ensure the success of the systematic effort needed to prevent faults and dangerous situations, incidents and accident or undesired conditions arising or developing, and to limit pollution and injury to persons and damage to equipment, Facilities or property, that will support and maintain a favourable health, environment and safety culture that [must] pervade all levels of the company and its contractors organization as well as every individual activity or establishment.*

*INP also recognizes that a favourable health, environment and safety culture is [also] needed to ensure consistent and continuous[al] development and improvement of health, environment and safety.*

## 4. SUBMITTING AN APPLICATION

- Applications must be consistent with the provisions of the Petroleum Law No 21/2014 of 18 August and the Petroleum Operations Regulations.
- Applications on behalf of more than one company are to be accompanied by a fully executed agreement between those companies. Terms and conditions of such agreements may not deviate from the requirements stipulated by applicable Mozambican law including the Petroleum regulatory regime consisting of the petroleum Law, Petroleum Operations Regulations, the model EPCC and its appurtenant documents.
- A non-refundable fee of MT 500,000 per applicant must accompany the application.
- Applications should be made in triplicate, in sealed envelopes clearly marked on the top “APPLICATION FOR HYDROCARBON EXPLORATION IN MOZAMBIQUE 5th LICENSE ROUND ” must be sent by registered mail or hand delivered.
- A receipt will be issued on receipt of each application.
- INP will post on the website ([www.inp-mz.com](http://www.inp-mz.com)) the list of applicants and the blocks applied for one week after the license round application deadline.
- All bids shall remain valid for at least 6 months from the date of the licensing round application deadline.

# MOZAMBIQUE 5<sup>th</sup> LICENSE ROUND – CLOSING DATE

Applications must be received in INP Office Maputo

by 12:00 Midday

Tuesday 20<sup>th</sup> January 2015

## 5. BID EVALUATION CRITERIA

The Ministry of Minerals Resources and the National Petroleum Institute will take the following aspects into consideration:

- The technical competence and financial strength of the applicant to be able to carry out exploration and production of hydrocarbons within legal requirements and industry standards.
- The technical database used in making the application.
- The technical evaluation and obligatory work program. Preference will be given to bids which demonstrate an active and cost-effective exploration approach, with satisfying progress.
- Economic terms offered by the Applicant
- Strength of the proposed systems, standards and management for health, safety and environmental protection.
- Level of institutional support and training.

### **Important Note:**

*INP encourages companies to present a technical proposal that will maximize the knowledge of the petroleum potential of the Area(s) applied for. The Score Card will be included in the Application Guidelines document to made available shortly.*

# Applicant Guidelines

## Single Company Applications

License to be awarded in the 5<sup>th</sup> Round will contain a minimum of 2 companies in addition to State Participation. This may involve INP combining applicants to achieve this requirement.

## Group Applications

- Recommend 2 to 4 companies per group
  - Operator
  - Concessionaires 2 - 3

Note:

*In addition the State through ENH will have a carried interest (minimum of 10% biddable) in each EPCC.*

# Experience – Onshore

## Operator

- Operatorship of at least one onshore exploration / development program including seismic and drilling
- Total assets & capital greater than USD 100 Million

## Non-Operator / Partner

- Should have sufficient assets to support the proposed work program and contingencies

## All Participants

- *Companies must have proven expertise, technical capacity and financial means to conduct the required petroleum operations in an efficient manner (Reference the Petroleum Law – Article 26)*

# Experience – Offshore less than 500m

## Operator

- Operatorship of at least one offshore petroleum license and the drilling of exploration and development wells
- Total assets & capital greater than USD 2 Billion

## Non-Operator / Partner

- Should have sufficient assets to support the proposed work program and contingencies

## All Participants

- *Companies must have proven expertise, technical capacity and financial means to conduct the required petroleum operations in an efficient manner (Reference the Petroleum Law – Article 26)*

# Experience – Deep Water Offshore > 500m

## Operator

- Operatorship of at least one petroleum license in water depths in excess of 500m including drilling of exploration or development wells.
- Total assets & capital greater than USD 5 Billion

## Non-Operator / Partner

- Total assets & capital greater than USD 250 Million

## All Participants

- *Companies must have proven expertise, technical capacity and financial means to conduct the required petroleum operations in an efficient manner (Reference the Petroleum Law – Article 26)*

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# Concluding Remarks

Chairman of INP  
**Mr Arsenio Mabote**

## **Mozambique offers good exploration opportunities:**

- Good prospective acreage available
- Favourable legal, regulatory and fiscal framework
- Adequate infrastructure for natural gas transmission;
- Political stability

## **Mozambique offers good investment opportunities:**

- The socio-economic indicators are steadily growing
- GDP is growing on average of 7 to 8% per year
- The inflation rate is under control and the local currency the new metical is stable
- The fiscal incentives for foreign investment are attractive
- The infrastructures such as roads, telecommunications are improving substantially

The presentation material shown today and bid documentation will be available shortly to download from:

[www.inp-mz.com](http://www.inp-mz.com)

# INP Advisors / Partners

INP would like acknowledge it Advisors and Multi-Client data partners

## INP Advisors:



## INP Multi-Client Projects / Technical Data:

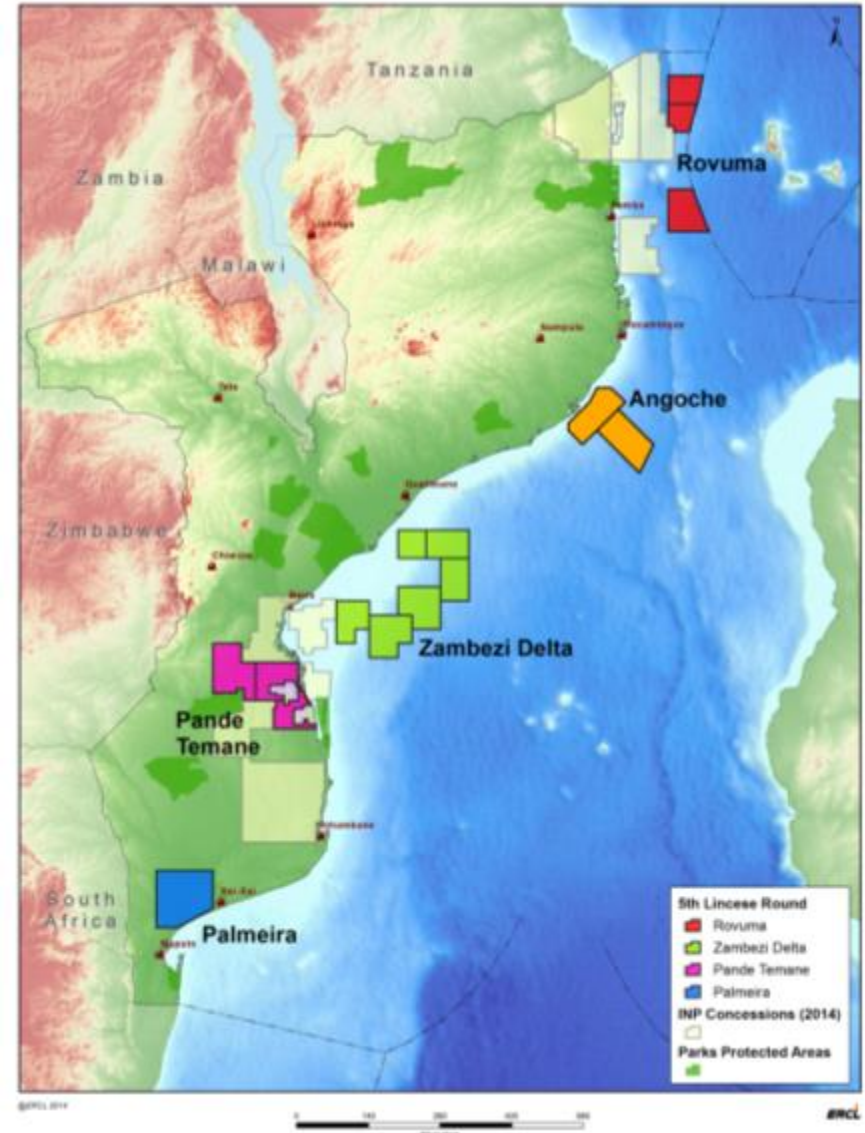


# INP

welcome your application  
in the  
Mozambique  
5<sup>th</sup> Licensing Round

## Questions ?

For further information please visit  
[www.inp-mz.com](http://www.inp-mz.com)



# Documents available 31<sup>st</sup> October 2014



REPUBLIC OF MOZAMBIQUE  
MINISTRY OF MINERAL RESOURCES

## MOZAMBIQUE 5<sup>TH</sup> LICENSING ROUND

### APPLICATION GUIDELINES & MINIMUM WORK PROGRAMS

Round closes Tuesday, 20<sup>th</sup> January 2015



**INSTITUTO NACIONAL DE PETRÓLEO**  
Av. Fernão de Magalhães nº 34 1º Andar  
CP nº 4724  
Maputo – Mozambique

INP Instituto Nacional de Petróleo



REPUBLIC OF MOZAMBIQUE  
MINISTRY OF MINERAL RESOURCES

## MOZAMBIQUE FIFTH LICENSING ROUND

### TECHNICAL DATA

Please send / deliver your  
application to:

(See Guidance Notes)



**INSTITUTO NACIONAL DE PETRÓLEO**  
Av. Fernão de Magalhães nº 34 1º Andar  
CP nº 4724  
Maputo – Mozambique

# Mozambique 5th License Round



This information is provided by INP as an introduction to the Mozambique 5<sup>th</sup> License Round.

Bid applications will close on Tuesday 20<sup>th</sup> of January at 12:00 noon.

For further details, information about data packages and data rooms please contact:

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